Province of Nova Scotia

REPORT OF THE DEPARTMENT OF MINES

1908

HALIFAX, N. S.
COMMISSIONER PUBLIC WORKS AND MINES
KING'S PRINTER.
1909.

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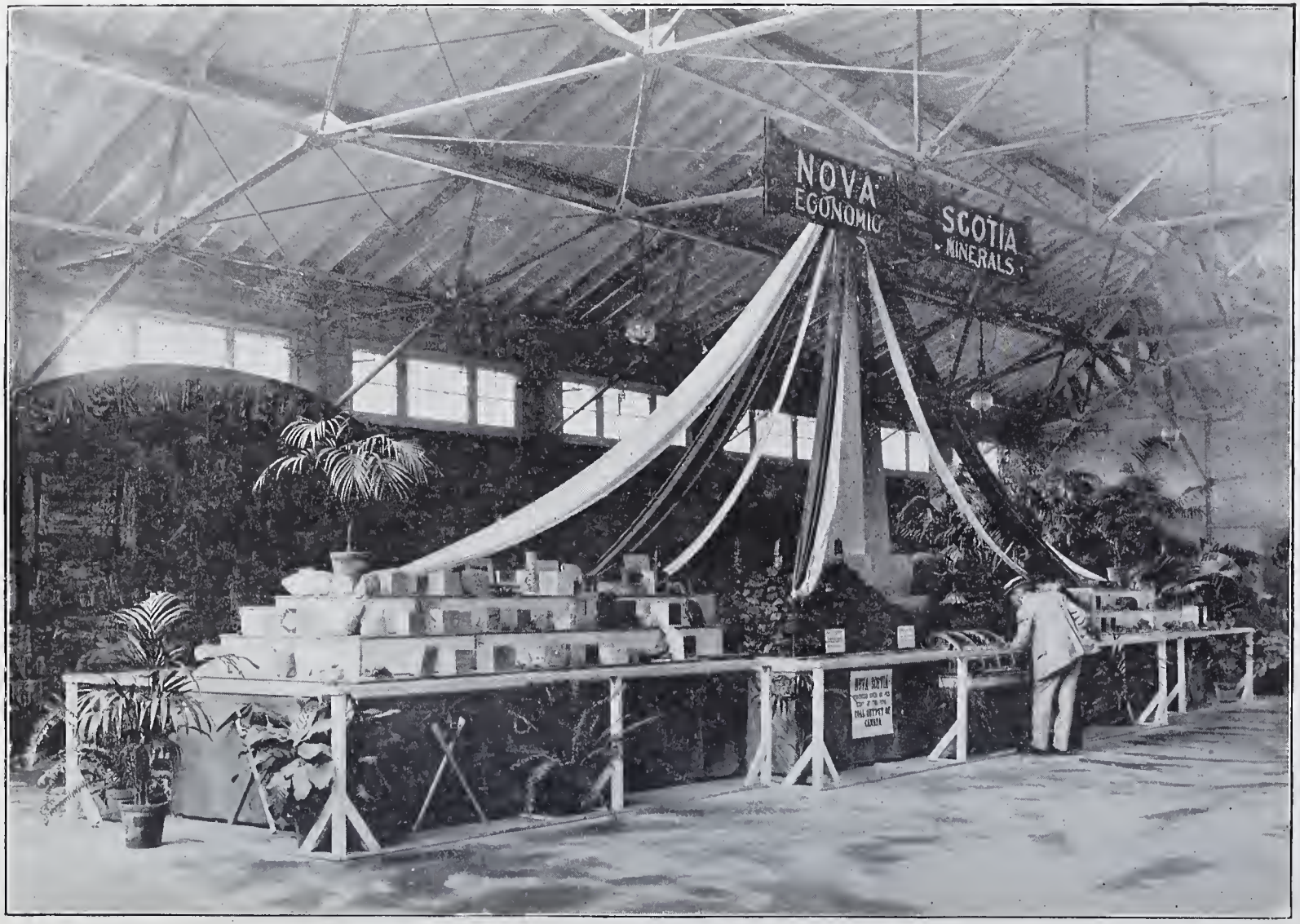


Nova Scotia Mineral Exhibit at Toronto Exhibition, 1908.

Department of Mines

Report for the Year ended September 30th, 1908.

To His Honour the Hon. Duncan C. Fraser,

Lieutenant-Governor of Nova Scotia.

May it Please Your Honour,—

I respectfully present herewith, to Your Honour, the Annual Report of the Inspector of Mines, containing an account of the progress of mining operations, together with statistical information compiled by him from official and other returns.

I have the honour to be,

Your Honour's obedient servant,

Christopher P. Chisholm,
Commissioner of Public Works and Mines.

Halifax, December 30th, 1908.

REPORT

ON THE

MINES OF NOVA SCOTIA

By HIRAM DONKIN, C. E.

Office of Inspector of Mines,
Halifax, December 1st, 1908.

To The Honorable Christopher P. Chisholm, K. C., M. L. A., M. E. C., Commissioner of Public Works and Mines:

Sir,—I beg leave to submit the annual report on the mines of Nova Scotia.

The following summary, based upon information supplied to this office, shows the mineral production of Nova Scotia for the year ended September 30th, 1908, compared with that for the year ended September 30th, 1907.

	Year ended Sept. 30, 1907.	Year ended Sept 30, 1908.
Coal raised (gross tons)	5,730,660	6,299,282
Pig iron (gross tons)	293,436	326,303
Iron ore (net tons)	*630,275	*902,475
Lime stone (net tons)	458,601	484,685
Coke made (net tons)	493,102	505,003
Gypsum (gross tons)	332,345	242,535
Gold (ounces)	15,006	11,990
Bricks	25,000,000	23,000,000
Building stone (net tons)	63,861	45,500
Cement (barrels)	58,762	44,529
Antimony ore (net tons)	1,403	132 ½
Manganese ore (gross tons)	†495	.....
Copper ore (net tons)	2,471	1,200
Drain pipe (feet)	300,000	300,000
Grindstones (net tons)	350	360
Copper (pounds)	12,320	28,800
Moulding sand (net tons)	190	185

* Including imported ore. N. S. ore 30,575 tons.
† All imported.

An exhibit of the economic minerals of Nova Scotia was made at the Canadian National Exhibition at Toronto, Ontario, in September 1908, where similar exhibits were shown by other provinces of the Dominion. The exhibit was in charge of Mr. Piers, curator of the Provincial museum, who had had charge of Nova Scotia's exhibit at Jamestown in the previous year. The Nova Scotia exhibit at Toronto gained much praise from the press and mining men and others who inspected it, both for the quality and variety of the minerals and the attractive manner in which they were displayed. Among those who examined the exhibit, were the British and foreign mining and metallurgical engineers who came to Canada as the guests of the Canadian Mining Institute. The specimens of gold won many econiums. A descriptive catalogue of the entire exhibit and our official reports were distributed and information regarding our mineral resources given to enquirers by Mr. Piers.

I am pleased to state that this exhibit was awarded two gold medals,—one for the collection as an exhibit of economic minerals, and the other for the exhibit of free-milling gold ores.

An exhibit was also made as usual at the Mines Building of the Provincial Exhibition at Halifax from the 2nd to the 10th of September. The absence of so many specimens at Toronto, left vacancies in the local collection, which, however, were filled up as well as possible with new material and some large samples from the museum.

Mr. Piers, in his report, has referred to an important find of Scheelite (a valuable ore of Tungsten) at Moose River, Halifax County, and also describes an examination made of the Polson Lake Copper Mine.

Mr. Piers has likewise continued his regular work connected with the administration and enlargement of the Provincial Museum, the Science Library, and the Public Records of the Province.

The demand for departmental drills is steadily increasing and was for 1908 largely in excess of 1907.

Details of the work done in 1908 will be found in Mr. Picking's report.

Statement showing sources of Revenue and Amounts received by Mines Department during the year ended September 1908.

	1st. Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
Prospecting License apps.	$ 761 50	$ 702 00	$ 1068 50	$ 1510 50	$ 4042 50
Gold lease applications...	686 00	312 00	908 00	1300 00	3206 00
Gold Rentals.....	50	1 50	921 00	9882 00	10805 00
License to Search apps...	4140 00	2100 00	1660 00	1540 00	9440 00
Leases (other than Gold)..	900 00	600 00	1100 00	950 00	3550 00
Rentals (other than Gold).	.....	.....	4830 00	26490 00	31320 00
Gold Royalty...	189 63	255 81	1534 28	340 20	2319 92
Coal Royalty	181743 42	142394 17	125376 33	167419 74	616933 66
	$188421 05	$146365 48	$137398 11	$209432 44	$681617 08
Fees.....					1399 87
					$683016 95

Statement of Bonuses Iron and Steel.

Amounts paid as bonus on each ton of Coal consumed in the manufacture of Iron and Steel in Nova Scotia, as follows:—

1907		
October 26,	Dominion Iron and Steel Co., Ltd.....	$24773 08
November 15,	Londonderry Iron and Mining Co., Ltd.....	267 60
1908		
February 5,	Londonderry Iron and Mining Co., Ltd.....	756 15
" 5,	Nova Scotia Steel and Coal Co., Ltd.....	2694 50
" 5,	Nova Scotia Steel and Coal Co., Ltd.....	2367 70
" 12,	Nova Scotia Steel and Coal Co., Ltd.....	2936 60
" 17,	Dominion Iron and Steel Co., Ltd.....	12199 70
April 18,	Dominion Iron and Steel Co., Ltd	14125 50
May 2,	Londonderry Iron and Mining Co., Ltd.....	488 20
" 18,	Nova Scotia Steel and Coal Co., Ltd.....	2521 95
August 7,	Nova Scotia Steel and Coal Co., Ltd.....	2163 50
		$65294 48

COAL TRADE.

The returns of Coal sold during the year 1908 show, compared with the returns of 1907, as follows:

	1907	1908
Nova Scotia	1,882,419	1,950,632
New Brunswick	427,128	510,331
Newfoundland	146,502	207,062
Prince Edward Island	77,493	63,331
Quebec	1,709,592	2,047,638
West Indies	2,598	
United States	616,312	799,634
Mexico	7,591	8,907
Other Countries	12,483	4,697
Bunker	204,572	193,352
	5,046,690	5,485,583

CUMBERLAND COUNTY.

During the fiscal year of 1908 the production was 559,013 tons, as compared with 508,202 tons in 1907.

The principal producers were the Cumberland Railway and Coal Co., 416,132 tons and the Maritime Coal Railway and Power Co., 66,969 tons.

The exploration in the coal fields west of Springhill was continued by Mr. Hugh Fletcher during the whole year.

The report of Mr. A. V. Cameron, Deputy Inspector for the Cumberland District gives details of the condition of the collieries in his district.

PICTOU COUNTY.

The production for the fiscal year of 1908 was 777,217 tons as compared with 731,921 tons in 1907.

The principal producer was the Acadia Coal Co., with an output of 413,782 tons.

The report of Mr. Thomas Blackwood, Deputy Inspector for the District of Pictou, gives details of the condition of the collieries in his district.

CAPE BRETON.

The production of coal for the fiscal year of 1908 was 4,556,446 tons as compared with 4,143,753 tons in 1907.

The principal producer was the Dominion Coal Company Ltd., with an output of 3,816,958 tons.

The reports of Mr. N. A. Nicholson and Mr. John Cadegan, Deputy Inspectors for the district of Cape Breton, give details of the condition of the collieries in their district.

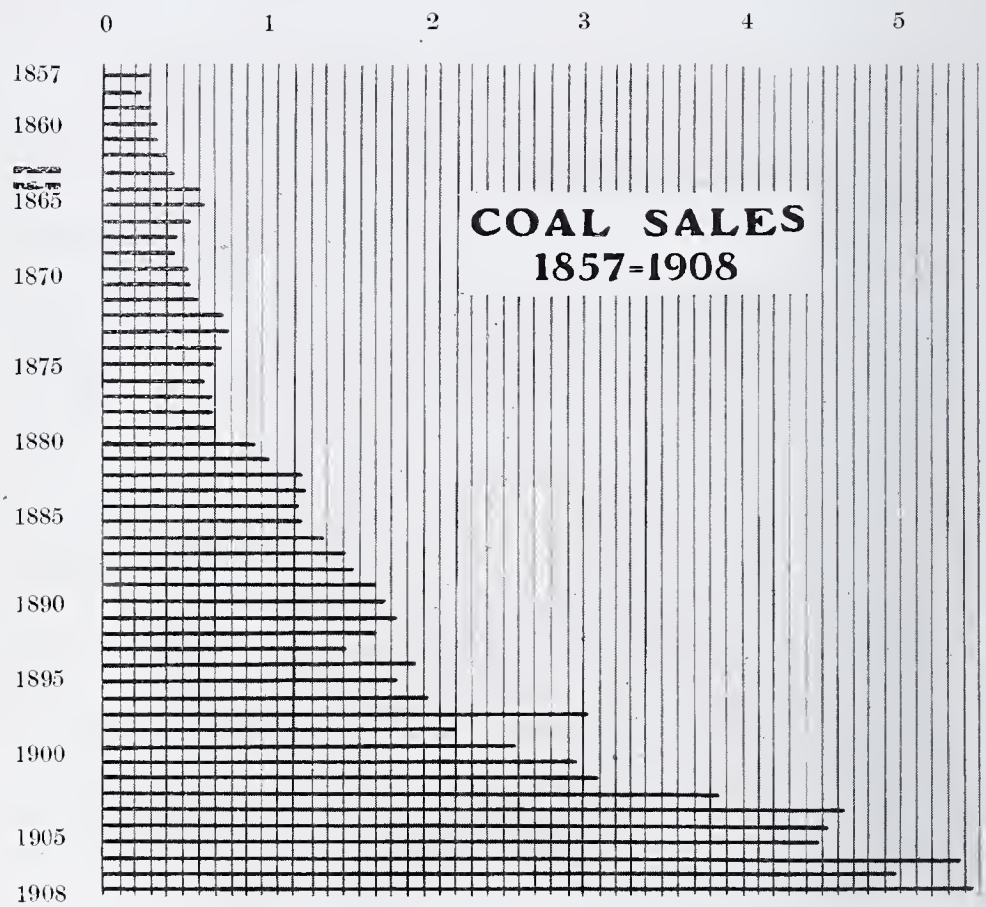
INVERNESS COUNTY.

The production of coal for the fiscal year of 1908 was 402,655 as compared with 345,391 tons in 1907.

The principal producer was the Inverness Railway and Coal Co., with an output of 283,704 tons.

The report of Mr. W. F. Davis, Deputy Inspector for the district of Inverness gives details of the condition of the Collieries in his district.

NOTE.—In addition to the labor returns as found on page xv which is the statutory form, additional information will be found, as to number of men directly employed in the coal industry of Nova Scotia, by reference to the employment statistics given on page xxv which includes classes of employes not heretofore accounted for in the statutory form.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1
2
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1857
1860
1865
1870
1875
1880
1885
1890
1895
1900
1905
1908
COAL SALES
1857-1908

BRIDGEPORT, November 25th, 1908.

HIRAM DONKIN, ESQ.

Deputy Commissioner, Public Works & Mines.

SIR :—I beg leave to submit to you my report on the coal mines of the southern district of Cape Breton, for the year ended September 30th, 1908.

NORTH ATLANTIC COLLIERIES, PORT MORIEN.

The main haulage deep which had 700 feet of water in it, was pumped out and extended 800 feet.

The traveling road was driven 1750 feet and No. 1 west levels were extended 900 feet. An angle deep, connecting No. 2 and No. 3 levels, was driven 700 feet. No. 2 and No. 3 levels were each extended 800 feet.

1500 feet of double track were laid in the haulage deep.

The pumps at the main lodgment have been duplicated. A half battery of Babcock and Wilcox boilers have been installed.

A new steel smoke-stack 110 feet high, 6 feet in diameter lined with fire-brick throughout, has been erected. All the machinery has been overhauled and is now in good order. The quantity of air in circulation is 30,000 cubic feet a minute. The workings of this mine are all under-sea.

I visited this colliery 12 times during the year.

Dominion No. 2. Glace Bay.

The deeps, levels, and head-ways were advanced in this mine during the year, as follows :—

North deeps advanced	250 ft.....	Total length	3580 feet
No 4 south level	450 "	"	5000 "
No. 1 level off south headway.....		"	3150 "
" 2 " " "	150 ft.....	"	3450 "
" 3 " " "	200 ".....	"	1400 "
" 3 north-motor level	700 ".....	"	6300 "
" 1 headway off No 3 N.level	140 ft.....	"	2300 "
" 2 " " "	50 ".....	"	2150 "
" 3 " " "	820 ".....	"	2100 "
" 4 " " "	640 ".....	"	1500 "
" 5 " " "	525 ".....	"	1075 "
" 2 headway off No 4 S.level	800ft.....	"	2150 "
" 2 " " 1 "	50".....	"	1400 "
" 3 " " 1 "	340".....	"	940 "
" 4 " " 1 "	230".....	"	800 "
" 5 " " 1 "	100".....	"	1100 "
" 2 " " 2 "	350".....	"	1600 "
" 3 " " 2 "	320".....	"	1500 "
" 4 " " 2 "	250".....	"	1200 "
" 1 " " 3 "	575".....	"	575 "
New deep off No. 3 N. level	375".....	"	375 "

Pillars are being drawn in the following sections of this mine:

(1) On old No. 2 level off south-motor headway.

(2) Nos. 1, 2 and 3 headways off No. 1 level off south-motor headway.

(3) Nos. 1, 2 and 3 headways off No. 2 level off south-motor headway.

(4) North-motor headway, and No. 2 headway off No. 6 level.

(5) No. 1 headway off No. 3 north level.

(6) No. 2 headway off No. 6 north level.

(7) Both sides of north deep, No. 6 landing.

There were 391,762 Tons mined from these pillars during last year

The pump-house has been re-propped with steel I-beams and lagged with plate and rails.

A concrete wall 2 feet thick, tapering to 1½ feet at the roof, has been put in. The pump-house is 52 feet long and will accomodate another pnmp the size of the one now there.

A drift has been driven through the rock in the air-tunnel to the man-cage shaft. This drift is a way-of-escape in case of fire in the mine. Two iron doors are to be placed at the shaft-bottom, so that the shaft can be kept clear of smoke in case of fire, and quickly restore the ventilation if it should become deranged.

Safety-hooks have been put on the cages.

The quantity of air in circulation is 230,000 cudic feet a minute.

I visited this colliery 26 times during the year.

Dominion No. 3.

The following development work has been done at this Colliery during the year :—

Deeps driven,	1000	feet ;	Total	length	7250	feet.
14 west level,	600	"	"	"	1250	"
14 east "	500	"	"	"	1200	"
15 west "	1200	"	"	"	1200	"
15 east "	1100	"	"	"	1100	"
16 west "	500	"	"	"	500	"
16 east "	600	"	"	"	600	"

Pillars have been drawn on No. 12, east and west, No. 13, east and west, and on No. 14 west levels.

Air-crossings have been built over Nos. 14 and 15 landings.

The gross output for the year was 380,997 tons, and the average quantity of air in circulation, 80,000 cubic feet a minute.

Up to August 11th, when J. A. McDonald and John Lee were killed, this mine had been exceptionally free from fatal accidents—more than 900,000 tons of coal having been raised without an accidental death at the Colliery.

I visited this Mine 20 times during the year.

Dominion No. 4, Caledonia.

The east deep has been extended since last Report. No. 9 east level, under-sea, has been driven 800 feet, total length 2400 feet. No. 8 east level, under-sea, has also been driven 800 feet, total length 3400 feet. No. 9 west, off east deep, has been driven 1100 feet, total length 3300 feet, These levels are now into barrier, east and west.

Headings are being driven along the barrier. No. 8 west heading has been driven 250 feet, total length 250 feet.

Pillars have been drawn in Nos. 6 and 8 east and No. 7 west.

The west deep has been sunk 600 feet and has now a total length of 5600 feet.

No. 6 east level has been driven 400 feet ; total length 2800 feet.
" 7 " " 1100 " " 2100 "
" 8 " " 200 " " 200 "
" 9 " " 200 " " 200 "

Pillars have been removed in Nos. 4, 5 and 6 east, in No. 7 west and in west level section.

The explosives used are bull-dog and excellite.

A turbine pump, capacitity 420 gallons a minute, has been placed at No. 9 east deep. This pump handles all the water in the east deep below No. 5 east. Another of this class of pump is being installed.

A five-plunger reciprocating pump, capacity 500 gallons a minute, has been placed in No. 8 west deep. This pump takes all the water below water-shaft level and a turbine pump is being placed at this station, to be used if required, its capacity is 350 gallons a minute. These pumps are delivering to the surface, and are driven by electric power supplied from the Central Station at Dominion No. 2.

A man-shaft has been sunk on the east side of the mine to No. 6 east headway. This shaft is 149 feet and is provided with ladders. It is used also as an upcast for the east deep and has improved the ventilation.

An overcast has been put on No. 4 east, west deep.

100,000 cubic feet of air is circulating in the mine.

Surface Improvements.

A new brick-house has been built for the feed pumps and a brick wall put in between the boiler house and the compressor house.

The haulage and hoisting engines have been repaired.

There have been no fatal accidents at this colliery during the year.

I visited this mine 20 times during the last year.

DOMINION NO. 5.

French Slope—Reserve.

Main deep has been driven 600 feet last year, making a total distance of 11,500 feet. The south deep has been driven 500 feet last year.

Eleven rooms have been broken off this deep and one pair of levels driven 350 feet: levels have also been broken off main deep, driving north, and have been driven 600 feet.

A lodgment has been made at No. 10 landing, north. A Cameron pump, 14 by 7 by 18 inches has been placed.

No. 9 level, north, has been driven 800 feet to barrier at Dominion No. 1, and one headway off this level has been driven 900 feet, and 15 rooms broken off this headway.

No. 2 headway, off same headway, has been driven 400 feet, and five rooms broken off.

In No. 8 level, north, rooms have been driven to the barrier and pillars started back.

Two electric turbine pumps, 400 gallons capacity each, have been placed at No. 8 lodgment, and a new pump-house 24 by 18 feet, has been built of concrete.

All the rooms in No. 7, north landing, have been driven to the barrier between Reserve and Dominion No. 1, and pillars started back. The quantity of air in circulation is 140,300 cubic feet a minute.

On No. 6 landing, north, the pillars have been all drawn successfully. Pillars have also been drawn on Nos. 3, 7, and 8, south. A new concrete engine-house 16 by 24 feet, has been built above No. 8 landing, and an auxiliary haulage-engine, 100 h. p. electric motor has been placed, to haul the coal from the deeps. This is direct haulage which lands the coal on No. 9 landing to the endless haulage.

A bore-hole has been put through the pillar at the bottom of the lodgment in the main slope, and the water instead of being pumped in the main slope, is let run to the electric pumps in the French slope.

East Slope.

All the rooms on Nos. 9 and 10 landings, south, in each slope, have been driven to the barrier in Dominion No. 3, and the pillars have been started back. All the pillars in Nos, 7 and 8 landings, south, have been successfully drawn. 120,000 cubic feet of air is circulating in east slope.

Surface Improvements.

An air-shaft, 32 feet, 10 feet in diameter has been sunk to ventilate No. 10 colliery. A Styne fan, eight feet in diameter, has been placed and is driven by an Atlas engine 9 by 14 inches. A nut-coal pocket has been built with a capacity of 25 tons. A conveyor driven by a 15 h. p. electric motor, has been erected. This conveyor takes the nut-coal from the screen to the nut-pocket, where it is loaded into cars.

A five inch water-line has been laid from Old Bridgeport reservoir to this colliery, a distance of 6000 feet. This line is for the purpose of supplying water to the plant at the colliery.

I visited this colliery 25 times during the year.

Dominion No. 6—Glace Bay.

The development work in this mine, for the last year is as follows :—

There has been no sinking done, and the long-wall work was stopped on September 1st.

No. 3	west	levels are	now in	from the slope	2200 feet.
" 4	"	"	"	"	3050 "
" 5	"	"	"	"	2150 "
" 6	"	"	"	"	1300 "
" 4	east	levels	"	"	1050 "
" 5	"	"	"	"	1500 "
" 6	"	"	"	"	1300 "

A pair of headways driven through from No. 5 east to No. 4 east level 550 feet.

A pair of headways driven through from No. 6 east 600 feet toward No. 5 east.

A pair of headways driven from No. 4 to No. 3 west, 500 feet, but not through.

A pair of headways driven from No. 5 to No. 4 west, 575 feet.

A double track was laid in the slope, from the bankhead to No. 4 landing, 2400 feet. A large lodgment is being made to the rise of No. 6 east level and a large duplex pump will be placed, which will pump all the water up the bore-hole at McQueen Point. This bore-hole is 330 feet deep, and has a ten inch wrought-iron pipe casing from top to bottom. The Ackroyd & Best safety lamp was put in the mine during last summer. These lamps are lighted by electricity, and are giving satisfaction.

The output for last year was 245,130 tons, and the quantity of powder (bull-dog) used, 469,966 lb. or 5.24 tons of coal for each pound of powder used. 50,000 cubic feet of air a minute is circulating.

I visited this colliery 13 times during the year.

Surface Improvements.

A wooden extension 40 by 30 feet has been built to the wash-house. A new winding-engine house, 40 by 50 feet, has been erected, the side next to the bank is built of red brick, the remainder of the building is covered with Eastlake galvanized shingles. The winding engine is a Corliss, 26 by 48 inches, with two friction drums, eight feet in diameter. These drums each, hold more than 11,000 feet of one inch wire-rope. This engine will haul twenty-five 1½ ton boxes from the slope, each trip. It is equipped with steam brake, steam reversing gear, and

steam friction, and is rated one of the best engines, for the work it is intended to do, in the province. It was built by the Jenckes Machine Company of Sherbrooke, Quebec. A fan that will produce 300,000 cubic feet of air a minute, has been erected. It is connected to a 16 by 16 inch, Robb high-speed engine, by eight 1¼ inch ropes. The fan-engine house is of concrete and brick, and has fireproof roof, windows, and doors. The fan and winding engine will be in operation in a few days.

Dominion No. 7.

No additional lifts have been broken off; but No. 3 has been opened out and developed.

No. 2, north, is now in 2000 feet, 850 feet having been driven during the year. Four sets of headways are now broken off the level, 400 feet apart.

No. 1 headways are up to the barrier, total distance 700 feet, 250 feet driven this year.

No. 2 headways are up to the barrier, total distance 600 feet, 475 feet driven this year.

No. 3 headways are up to the barrier, a total distance of 540 feet, all this distance driven this year.

No. 4, headways have been driven 200 feet this year.

No. 2, south is now in 1300 feet, 650 feet driven during the year.

Two sets of headways are broken off, 400 feet apart.

No. 1 headways are up to the barrier, total distance 550 feet, 250 feet driven this year.

No. 2 headways are up to the barrier, 325 feet driven this year.

No. 3, north, is in 1050 feet, 900 feet driven this year.

Two sets of headways are broken off, No. 1 headway is up 550 feet, and No. 2 headway is up 200 feet, all driven this year.

No. 3, south, is in 650 feet, 550 feet were driven this year.

One set of headways is broken off, 350 feet of which were driven this year.

The deeps are now 650 feet below No. 3 landing, and were driven 350 feet during the year.

Progress in the deeps has been hampered during the summer, owing to the stone parting in the coal gradually thickening till it reached almost four feet.

We are now mining on top of the stone, height of coal being mined, five feet, three inches.

Surface.

A brick boiler-house was erected, and an additional battery of boilers, (Babcock & Wilcox) was placed. A new and up-to-date screening plant is now in operation. The shakers, picking belts, and loading belts are driven by three electric-motors.

A new man-engine has been placed. This engine was built by I. Matheson & Co., and is 18 by 36 inches. A complete water-system, with hydrants, has been installed at the colliery, with connections to the bank. A new fire-pump 14 by 7½ by 12 inches, capacity 500 gallons a minute, with 50 lb. steam pressure, is ready for use.

Ventilation.

Permanent concrete-stoppings have been built from the fan shaft to No. 3 landing, this work has materially improved the ventilation.

The pit bottom, haulage-engine, Davy pump, and stables have a water service directly connected with the surface system. This system is also connected to the main air-line, and is thus available for any part of the mine.

A new haulage-engine has been placed at the head of the deep and is driven by 100 h. p. electric-motor. An electric centrifugal-pump has just been placed, and is ready for work. It is above No. 2 landing, and the present air-pump will act as an auxiliary.

New stables have been bui lt inold No. 1, north, (under-sea.)

The deep was double tracked last Spring, and an endless rope haulage put in, 13,000 feet of rope are now in operation.

I visited this colliery 20 times during the year.

Dominion No. 8. International.

The levels and headways in this mine were advanced during the year as follows:—

Main level, 780 feet;	....	Total distance,	7280 feet.
No. 2 " 660 "	.....	" "	2660 "
" 2 headways, 740 ft.;	.....	" "	1260 "
New gravity headway, 800 ft.;	.....	" "	800 "

All the work in this colliery is being done toward the crop or rise workings. The water has been lowered to a point 3,900 feet from the pit bottom, and it is now within 1000 feet of the face of the deeps. The tanks at the pumping station have been working with only fair success during the year; but the electric pumps in the mine have been doing good work. The water is handled in three lifts, by a pump operated by electricity, placed at each lift. These discharge the water into the old water-level to the rise of the pit bottom, and it runs to the shore.

Marsaut safety-lamps were put in during the year. All the collieries of the Dominion Coal Company, that are in this district, are now supplied with safety lamps.

The average quantity of air passing in this mine is 60,000 cubic feet a minute.

I visited this colliery 14 times during the year.

Dominion No. 9. Harbour Seam.

Development in this colliery for the last year was as follows:—

No. 1 level, off north deep,	driven during year,	325	ft.;	total	2625	ft.
" 2 " " "	"	100	"	"	2950	"
" 3 " " "	"	1600	"	"	1600	"
" 2 " off south off angle deep	"	369	"	"	675	"
" 3 headway off No. 1 north level	"	450	"	"	1250	"
" 3 " " 2 "	"	50	"	"	650	"
" 4 " " 2 "	"	50	"	"	700	"
" 1 " " 3 "	"	..	"	"	720	"
" 2 " " 3 "	"	130	"	"	670	"
" 1 " " 2 south level	"	300	"	"	300	"
" 2 south level off main south deep	"	375	"	"	3225	"
" 3 " " "	"	...	"	"	2975	"
" 2 north " "	"	640	"	"	1900	"
" 2 headway off No. 2 north level, main S. deep		10	"	"	710	"
" 3 " " 2 "	"	..	"	"	750	"
" 2 " " 3 south "	"	600	"	"	600	"

There has been considerable increase in the quantity of water in this mine during the last year. An auxiliary pump has been added at the main lodgment. In addition to the Northey pump in the main south-deep there has been placed a 12 by 8 by 18 inch Jeansville duplex-pump. This pump has a six-inch wooden discharge pipe, owing to the nature of the water in this side of the mine, it was found necessary to use wooden pipes instead of iron pipes.

The average quantity of air in circulation is 200,000 cubic feet a minute, conducted throughout the mine in four splits.

The extracting of pillars has been continued during the year, on No. 1 south level, No. 1 north level, off main south deep, on Nos. 1 and 2, north level, off north deep, and in north headway. The work has been successful, nearly all the coal having been taken out. 96,051 tons have been mined from pillars during last year.

There was installed during the year, a new 14 by 20 inch Florey-engine, which hauls from the main and north angle-deeps, also for the extension of north angle-deep; and a Florey engine erected on No. 3 south level, off main south-deep.

There was a tail-rope system put in which has given satisfaction.

I visited this mine 24 times during the year.

Dominion No. 10. Emery Seam.

During the last year the main north-level has been driven 1000 feet, and gateways broken off leaving a 50 feet pillar below the level, and a 60 feet pillar above the level. The face has advanced 200 feet from the pillar, the length of this face is 1100 feet.

No. 1 north-level has advanced 400 feet, the length of the face is 1100 feet. This face has advanced 250 feet.

No. 2 north-level has been brushed 1200 feet and widened, the length of the face is 1400 feet, and has advanced 250 feet.

The south-level has been brushed 800 feet and widened. The width of this face is 600 feet, and has advanced 250 feet.

The south-deep has been driven 600 feet. Two lodgments have been driven, one at the pit bottom, and one at the bottom of the deep. The pit-bottom lodgment has been driven 260 feet down,

and three rooms have been driven off, each, a distance of 280 feet. The lower lodgment has been driven a distance of 250 feet down, and four rooms driven a distance of 300 feet each.

The north main-haulage deep is being driven. The quantity of air in circulation is 27,600 cubic feet a minute. Six long-wall machines have been put in during the year, which makes a total of ten machines now in the mine. A new 8 inch air-line has been laid along the traveling-road, six-inch pipe along all the levels, and 2 ½ inch pipe in the gates.

I visited this colliery 20 times during the year.

The Draeger Breathing-Apparatus.

The Dominion Coal Company built a rescue station at No. 2 Colliery, this year.

The building is of brick and is 50 by 22 feet and 10 feet high. One part of it is used as an emergency-hospital. The smoke-house is a few feet from the station and is 25 by 15 feet by 9 feet post.

Each Colliery of the Dominion Coal Co., has not less than two corps, who are trained in the smoke-house, at the Central Station, to use the apparatus.

It is the intention of the Company to have sub-stations at the collieries, that are too far from the central station, equipped with sufficient apparatus for emergent use, in case of a mine-fire or explosion, until the apparatus at the central station can be brought to the scene of the accident.

The corps consists of five men. One of them called the leader, acts as foreman of the corps. His duty is to see that none of the men run out of oxygen, and that they are supplied with sufficient oxygen to bring them back to the station from which operations are directed. This station may be in the mine, and is decided upon when the apparatus is to be used, and should be as near, as is practically safe, to where the men start to use the oxygen, in order to save loss of time.

The duplex cylinder of the Draeger apparatus, which is used by the Dominion Coal Company is guaranteed to last two hours. There is no doubt about it lasting that time, as it has been tried in the smoke-house under conditions where a man can work harder than in the mine, as he is nearer the air supply.

Some of the equipments are supplied with smoke-helmets and some with mouth-pieces.

The smoke-helmet is much better than the mouth-piece, when fighting a fire, as the helmet protects the face from the intense heat and steam given off from a mine-fire.

It has been demonstrated at the recent fire at Sydney Mines, that the apparatus is very valuable in dealing with a mine-fire. Men that have had experience with a fire in a mine, know that it is of great importance to get as near as possible to the fire, to direct the water from the hose, owing to the space being usually very limited, due to falls, timber, and so forth. To get near to the fire, without the apparatus, it is necessary to carry a strong current of air onto the fire to prevent the smoke from coming back to the men. This strong current of air feeds the fire and the fire travels as fast as the men can follow it, with the means usually available in a mine.

Except that the men cannot see as well, they can do as much work with the aparatus in smoke, as they can in a clear atmosphere

Prospecting.

The Dominion Steel Company did some prospecting last year upon the Cumberland coal areas in the Cow Bay leases. In my report for 1907, I mentioned the opening, by trial pits, of some of the caol fields on those areas. Since that, the seams in this area have been all bored through and proved to be good, namely: one 8 feet, 1 inch, one 3½ feet, one 4 feet, and one 5 feet.

In addition to the before mentioned seams, I may say, that a 5 feet, 1 inch seam has been struck, which is clean coal throughout. This seam lies at a depth of 640 feet, and underlies an area of eight square miles, it is believed by experts to be the Tracy seam: if not, the Tracy seam lies below this one.

Yours truly,

JOHN CADEGAN,
Deputy Inspector of Mines,
Southern District of Cape Breton.

Accidents in Cape Breton Coal Mines, Southern District, Year ended September 30th., 1908.

No.	Date 1907.	Mine.	Name.	Age.	Occupation.	Remarks.
1	Oct. 2...	Caledonia	J. J. McNeill..	35	Roadmaker ..	Head injured by fall of coal.
2	" 3...	Emery	Arnerd Churbier	38	Shiftman	Premature shot, badly injured about face and body.
3	" 8...	Reserve	D. J. Nicholson.	20	Driver.....	Leg caught between box and timber while trying to stop his horse.
4	" 9...	Emery	John Savage...	22	Driver.....	While removing stone from road horse started and he was caught between boxes, breaking his leg and rib.
5	" 10...	Emery	A. C. McInnis..	35	Miner.....	Was bringing a trip to landing, foot smashed between boxes.
6	" 11...	Dominion, No. 2	Michael Madore	18	Driver.....	Body bruised by being caught between a box and a boom.
7	" 18...	Caledonia	C. Ferneybouh.	55	Shiftman	Hip injured by fall of stone.
8	" 22...	Emery	August. Philips.	22	Loader	Slightly injured by fall of stone.
9	" 23...	Reserve	D. Campbell...	50	Mch. runner..	Had back injured by fall of stone.
10	" 28...	Reserve	D. K. McDonald	30	Mch. runner..	Had leg broken by fall of coal, leg afterward amputated.
11	" 29...	Dominion, No. 2	Michael Jackson	37	Miner.....	Knee bruised by fall of coal.
12	Nov. 7...	Dominion, No. 3	Angus McInnis.	26	Miner.....	Leg fractured by fall of coal.
13	" 8...	Reserve	J. A. Campbell..	27	Timberman..	Killed by fall of stone.
14	" 8...	Reserve	J. D. McAskill.	28	Timberman..	Was working with John A. Campbell, back badly injured.

15	Nov. 9...	Dominion No. 2	D. A. McDonald	50	Miner.....	Arm lacerated by fall of stone, arm amputated.
16	" 11...	Harbor seam...	Dan McDonald.	16	Driver.....	Wrist fractured, caught between box and timber.
17	" 13...	Emery	Joseph Churchill	35	Headman	Fell into Emery shaft and was killed.
18	" 21...	Harbor seam...	John V. McNeill	26	Miner.....	Had pick stuck into his foot.
19	" 27...	Dominion No. 6	Daniel Burke...	17	Driver	Fell off of box coal leg slightly injured.
20	" 27...	" "	Daniel McLeod.	16	Pick carrier..	Fall of coal bruised leg and cut his head.
21	Dec. 2...	Harbor seam...	V. Giallucea ...	31	Loader.....	Leg broken by fall of coal.
22	" 7...	Reserve	J. Honneywell..	40	Loader.....	Head and leg injured slightly by a piece of coal from shot.
23	" 11...	Dominion No. 2	George Butler..	38	Miner.....	Injured internally by fall of coal
24	" 13...	Emery	Julian Faussian.	50	Shiftman.....	Leg broken by fall of stone.
25	" 30...	Caledonia.....	Colin McDonald	17	Oiler.	While oiling compressor was caught in machinery, injured hand.
	1908.					
26	Jan. 2...	Dominion No. 6	James Borden...	26	Driver	Caught between box and prop. had leg bruised.
27	" 8...	" "	Nathan Hiscock	44	Loader.....	Flesh wound on face, and leg bruised by fall of stone.
28	" 9...	" "	Jas. Nicholson..	38	Miner.....	Fall of coal broke his ribs.
29	" 17...	Harbor seam...	Nicolo Bendetta	23	Helper.....	Foot slightly bruised, caught between mining machine and pavement-
30	" 20...	Dominion No. 2	George Silliput.	21	Land'g T'nder	Foot hurt by being caught in sheave wheel,
31	" 20...	" "	H. Aspinwall...	24	Driver	Compound fracture of leg-caught between shafts and box.
32	" 21...	Reserve	Colin Marsh....	20	Miner.....	Leg broken by fall of coal.
33	" 29...	Dominion No. 2	George Seele ...	45	Miner.....	Leg broken by fall of stone.

Accidents in Cape Breton Coal Mines, Southern District, Year ended September 30th., 1908.—(Continued.)

No.	Date.	Mine	Name.	Age.	Occupation.	Remarks.
34	Feb. 1...	Hub	Dan McDonald.	30	Mch Runner.	Fatally injured, pelvis broken by fall of stone.
35	Feb. 7...	Harbor seam...	Charles Weeks..	25	Trip Runner.	Wrist injured by being caught between boxes.
36	" 14...	Dom. No. 6....	D. J. Nicholson.	30	Dep'y O'rman	Leg crushed between full box and empty trip, died the following day.
37	" 19...	" " 2....	Jerry Squires...	50	Miner.....	Face injured by an explosion of excellite.
38	" 19..	" " 2....	Thos. Keeping .	60	Miner.....	Face injured by an explosion of excellite.
39	" 22..	Caledonia	Fred Turner...	20	Driver	Caught between the rib and tub, hip injured.
40	" 22..	Dom. No. 6....	Dan McQueen..	25	Miner.....	Falling coal from premature shot, injured his leg.
41	" 22..	" "	David Howie..	38	Miner.....	Eyes injured by premature explosion of powder.
42	" 24..	" "	James Wood ...	13	Spragger	Broken fingers, box ran over his hand.
43	" 24..	" " 2....	Wm. Ellworth..	18	Driver	Slightly bruised, caught between box and pillar.
44	" 26..	Harbor seam...	Dan. Carmichael	24	Brakeman...	Foot caught between the bunters of cars-foot amputated.
45	" 26..	Dom. No. 2...	Robt. W. Jarvis.	36	Miner.....	Ankle injured by fall of coal.
46	" 27..	" "	Sam. Bradbury.	22	Driver	Leg broken by fall of coal.
47	Mar. 5..	" "	J. W. McDonald	30	Miner.....	Leg broken by fall of coal.

48	Mar. 16..	Dom. No. 6....	William Snow..	30	Sh'ter & L'der	Instantly killed by a fall of stone.
49	" 16..	" "	William Butt...	27	Sh'ter & L'der	Leg bruised by a fall of stone.
50	" 21..	" " 2....	J. E. Drinkwater	16	Driver	Three ribs broken by a fall of stone.
51	" 27..	Harbor No. 9 ..	Willam Condon	45	Laborer.	Foot bruised by a fall of stone.
52	Apr. 6..	Caledonia.....	Angus Ferguson	75	Laborer.....	Bruised leg by fall of stone.
53	" 7..	Dom. No. 6....	J. L. Sullivan..	50	Dep'y O'rman	Ankle badly strained by fall of coal.
54	" 8..	International...	John McInnis..	18	Driver	Instantly killed by fall of stone.
55	" 10..	Dominion No. 6	William Millie.	30	Mch. Runner	Machine fell off table, and bruised his foot.
56	" 23..	Harbor Seam...	Harry Head....	29	Miner.	Back slightly injured by fall of stone.
57	" 27..	Dominion No. 2	John Sueed....	40	Loader..	Skull fractured, ear cut, and three ribs broken by fall of coal.
58	" 29..	" " 6	Neil McVicar ..	13	Trapper.	Bruised leg, struck by running box.
59	" 30..	" " 2	Frank Brandle .	35	Sh'ter & L'der	Axe slipped and cut his neck.
60	May 6...	Harbor.....	James McDonald	33	Miner.	Back slightly injured by fall of stone.
61	" 7...	Emery	Jos. Armsworthy	40	Sh'ter & L'der	Shoulder bruised by fall of coal.
62	" 7...	Reserve.....	James Johnston.	18	Asst. Pipefitter	Fatally injured by air pipe bursting, died a month later.
63	" 9...	Dominion No. 6	John T. McLeod	23	Weighman ..	Struck by handle of winch, cheek bone fractured and eye injured.
64	"14...	Dominion No. 6	C. Nicholson...	24	Mch. Runner.	Machine fell off table and crushed his fingers.
65	"14...	Dominion No. 2	Amile Ginter...	17	Driver	Foot bruised, caught between shafts and box.
66	"18...	Reserve.....	D. J. Campbell.	40	Miner.	Severely injured, hips and face, fall of roof coal.
67	"18...	Emery.....	William Hart..	22	Pumpman. ..	Leg and arm broken by runaway box.
68	"20...	Harbor seam...	Berton Frost...	17	Driver	Foot went through hole in the bottom of box.

Accidents in Cape Breton Coal Mines, Southern Disirict, Year ended September 30th, 1908.—(Continued.)

No.	Date.	Mine.	Name.	Age.	Occupation.	Remarks.
69	May 21...	Caledonia	Kuste Pollick..	41	Sh'ter & L'der	Burnt about face and hands by flame from shot.
70	" 21...	Caledonia	Alex. Belloni...	23	Sh'ter & L'der	Same as above.
71	" 21...	Caledonia	J. J. McIntyre..	23	Sh'ter & L'der	Same as above.
72	" 22...	Hub..	Sidney Goodall.	22	Laborer.....	Leg crushed, fell off boiler.
73	" 22...	Dominion No. 2	John McLeod...	23	Miner.....	Leg broken by fall of stone.
74	" 23...	Dominion No. 3	Charles Wright.	30	Miner.....	Leg fractured by fall of coal. [spragged.
75	" 27...	" " 2	David Walker..	22	Miner.....	Knee injured by fall of coal, coal not
76	" 28...	" " 2	Alfred Pickup..	15	Driver	Leg broken, caught between bunters of boxes.
77	June 10..	" " 2	Wm. Flemming	40	Miner.....	Compound fracture of leg by a fall of coal.
78	" 10..	" " 6	Emanual Wells.	35	Tipple-man. .	Struck by box, bruised leg.
79	" 10..	Harbor seam...	H. McKinnon..	35	Miner.....	Foot cut by a piece of stone falling from roof.
80	" 12..	International...	Jos. McIntyre..	18	Land'g T'nder	Jammed between boxes, hips bruised.
81	" 15..	Dominion No. 6	Henry Laycock.	29	Miner.....	Finger crushed between two boxes.
82	" 16..	" " 2	J. D. Johnston..	27	Miner.....	Killed by a fall of coal.
83	" 19..	International...	Anthony Lynk.	23	Land'g T'nder	Struck by trip, skull fractured and back injured.
84	" 20..	Dominion No. 2	S. E. Ward	24	Driver	Coal fell from face and fractured small bone in leg.
85	" 22...	Caledonia	Acenies Chission	24	Onsetter.....	Box ran over his fingers.

86	" 29...	Dominion No. 6	Wm. T. Penny.	34	Helper..	Severely bruised by fall of coal.
87	" 30...	" " 2	John Sudworth.	35	Miner.	Axe slipped and cut his hand.
88	July 3...	" " 2	U. Kobanzzis ..	38	Loader.....	Foot injured by a fall of coal.
89	" 6...	Reserve.....	Greg'y Boutilier	17	Tally-Boy ...	Wrist fractured caught between two boxes.
90	" 6...	Dominion No. 2	John Austin....	27	Onsetter.	Body slightly bruised, jammed between boxes.
91	" 11...	" " 2	Fred Marshall..	19	Spragger	Slipped under box, arm bruised.
92	" 15...	Harbor seam...	Edward McLean	24	Miner.	Thigh fractured by fall of stone.
93	" 17...	Reserve.....	Hugh McAulay.	35	Miner.	Ribs broken by fall of coal.
94	" 20...	Dominion No. 2	Sol. Warford...	25	Sh'ter & L'der	Leg below the knee fractured by fall of coal, coal not spragged.
95	" 21...	" " 3	John Deveaux..	17	Driver	Leg injured, run over by box.
96	" 21...	Reserve	Dan McKenzie.	41	Miner.	Had leg broken by fall of coal.
97	" 24...	"	Michael White.	40	Miner.	Back broken by fall of coal-died in wash-house.
98	" 24...	Emery.....	Julian Lizziee..	35	Brusher.....	Two fingers cut off by fall of stone.
99	" 27...	Dominion No. 2	Wm. Sturgess..	18	Driver	Collar bone broken and injured internally, struck by trip.
100	" 28...	" " 2	Harold Ormrod.	19	Driver	Body bruised,caught between box and roof.
101	" 30...	Caledonia	William Tutty .	28	Miner.	Head injured by a fall of coal.
102	" 30...	Dominion No. 3	S. S. Cormier ..	18	Driver	Thigh injured, struck by full box.
103	" 31...	Caledonia	Polish Child...	2	.....	Killed by cars on the surface.
104	Aug. 1..	Reserve.....	Henry LeFort..	28	Mch. Helper.	Fell from top of boilers, and dislocated wrist and elbow.
105	" 3..	Caledonia	I. C. McNeil...	50	Miner.	Foot injured by fall of coal.
106	" 11..	Dominion No. 3	J. A. McDonald.	50	Shiftman.....	Killed by fall of stone.

Accidents in Cape Breton Coal Mines, Southern District, Year ended September 30th, 1908.—(Continued.)

No.	Date.	Mine.	Name.	Age.	Occupation.	Remarks.
107	" 11..	" " 3	John Lee.....	21	Shiftman....	Killed by a fall of stone.
108	" 15..	" " 2	Fred Laycock..	22	Driver	Foot crushed by a full box running over it.
109	" 24..	International...	Frank Nearing.	33	Miner.	Two toes crushed by full box running over his foot.
110	" 26..	Dominion No. 2	David Murphy.	24	Helper..	Back slightly injured by fall of coal.
111	" 26..	" " 2	A. E. Bradley..	27	Miner.	Slightly bruised by a piece of stone falling on him.
112	" 27..	Emery.....	A. McDonald...	30	Sh'ter & L'der	Leg broken by fall of stone.
113	" 28..	Caledonia.	John Suro.....	31	Fireman ...	Burnt by flame from fire doors.
114	" 28..	"	Geo. Suro.....	27	Fireman	Same as above.
115	" 28..	Dominion No. 6	Neil McPherson	68	Road Cleaner.	Instantly killed by runaway boxes.
116	" 28..	Harbor seam...	Ignatius Currie.	24	Driver	Foot cut by full box passing over it.
117	" 30..	International...	Chas. McNeil..	24	Driver	Fell down shaft, broken leg.
118	Sept. 2.	Dominion No. 2	Frank Hickman	35	Miner.	Head and side injured by fall of coal, coal not spragged.
119	" 8.	" " 2	Edward Hawley	16	Driver	Box knocked out prop and boom and stone fell on him, killed.
120	" 10.	" " 6	Lingi Bugin...	19	Miner.	Caught between boxes, hip dislocated.
121	" 15.	" " 6	Robert Cole....	18	Driver	Two fingers crushed, caught between boxes.
122	" 15.	Emery..	Alex.L. McLeod	35	Sh'ter & L'der	Leg broken by fall of stone.

123	"	18.	Dominion No. 2	P. Williamson..	35	Miner.	Compound fracture of leg by fall of coal.
124	"	18.	" " 2	Wm. Rusk.....	45	Sh'ter & L'der	Back slightly injured, fall of coal from face.
125	"	19.	" " 2	Alex. Grant....	17	Driver	Contusion on back, struck by runaway box.
126	"	26.	International...	Neil Buchanan.	35	Miner.	Struck by falling stone, two broken toes.
127	"	30.	" ...	Thomas Dunn..	48	Laborer	Struck by box, hips injured.
128	"	30.	Emery.....	Mark Hennessey	24	Sh'ter & L'der	Scalp wound & contusion of the arm & leg

Accidents, Nos. 2 and 9 Surface, October 1st, 1907, to September 30th, 1908.

No.	Date.	Mine.	Name.	Age.	Occupation.	Remarks.
	1907					
129	Nov. 23.	.....	Jno. Wall.....	40	Fireman	Body scalded. Vertical tubes gave away in boiler. (Fatal.)
130	" 23.	....	Wm. Ash.....	42	B'ler Repairer	Body scalded. Vertical tubes gave away in boiler.
131	Dec. 21..	.....	Ben Addy.....	36	Fireman	Body burned (Fatal) No. 4 Boiler exploded.
132	" 21..	.....	Jas. McDonald..	34	Fireman ...	" " " " " "
133	" 21..	.....	Nicholas Philpot	28	Coal to fires..	" " " " " "
134	" 21..	.....	D. McDougald..	35	Head Fireman	Face & hands burned." " " "
135	" 21..	.....	Angus McNeil.	24	Coal and fires.	Face & body burned." " " "
	1908					
136	Jan. 17..	.....	Rich. Crew....	26	Coal to fires..	Face slightly scorched.—Front vertical tube No. 16 Boiler burst.
137	" 17..	.....	Thomas Ling..	36	Machinist ...	Arms, ankle, face scorched.—Front verticle tube No. 16 Boiler burst.
138	Feb. 1...	.....	Rich. Crew....	26	Laborer.....	Killed—Fell down shaft.
139	May 4...	.....	Rod. McPherson	40	Machinist....	Face and hand scalded, Valve on No. 11 Boiler broke.
140	" 15..	.....	Ed. McDonald..	28	Fireman	Foot crushed. Foot caught between cylinder and plunger of stoker.

SYDNEY MINES, December 4th, 1908.

MR. HIRAM DOKIN, C. E.,

Deputy Commissioner of Public Works and Mines,

Halifax, N. S.

Sir,—I have the honor to submit my annual report for the year ended September 30th, 1908, on the coal mines in the northern division of the county of Cape Breton.

I am pleased to be able to report that the output of the collieries of this district exceeded that of last year by 101,400 tons. The entire year was marked by continuous activity in the coal trade.

I regret to have to report twenty-six accidents, six of which proved fatal. Most of these were due to falls of stone or coal. The law applying to the spragging of coal, and other precautions specified in the Mines' Regulation Act, as safeguards against accidents by falls, has been strictly enforced in every colliery. Since the shaft accident at Sydney No. 1, the Nova Scotia Steel Company have placed new safety appliances in the shafts of Sydney No's. 1 and 5. These appliances are the most modern and have stood the most severe tests.

A slight fire occurred in No. 5 lower lift, south side, Sydney No. 1, necessitating the flooding of that section. When the water was drained off, it was found that the fire had not spread, but had been wholly confined to the face, and apart from charring the loose coal mined, no other damage was done.

During the year, Sydney No. 2 was unwatered and re-opened and is now giving an output of 300 tons a day.

Tests were made at No. 4 colliery, by the placing of boreholes 1,000 feet apart in the direct line of the slope. A hole was put down 1,000 feet to the north. All the tests proved the coal to be lying at a regular dip and of uniform thickness.

The Toronto mine, which was closed for thirty years, is now being pumped out by the Colonial Coal Company.

Two collieries were opened by the Dominion Coal Co. on the Victoria areas. These collieries are connected with the Sydney & Louisburg Railway by a branch line of seven miles. Dominion No. 12, the larger of the two, has been put down with the view to excellent ventilation, and easy entrance to and exit from the mine. A barrier of 300 feet of solid coal has been left to protect the surface and prevent the inflow of surface water. Dominion No. 14, will be developed along the same lines as No. 12. These collieries are one mile apart and are being equipped to give the moderate output of 1500 tons a day.

In my duties I have been greatly aided by the readiness of the coal operators of this district to enforce the mining law as laid down in the Mines' Regulation Act. By its strict enforcement we hope to reduce the number of accidents, as we believe this can be done by the aid of the operator and his officials, with the hearty co-operation of the mine workers.

Dominion No. 1 Colliery.

There are 632 men and 58 boys employed at this colliery. Of this number, 537 men and 48 boys work in the mine and 95 men and 10 boys on the surface.

The output during the year was 559,957 tons, an increase over the previous year of 66,000 tons. Of this amount 110,122 tons were mined in pillars. Quantity of powder used, 79,046 lb. of bull-dog, compressed, and 221 lbs. excellite, during the year, making a total of 79,267 lb., 4206 lb. less than last year, with an increased tonnage of 66,000 tons.

Development Work During the Year.

The angle deep was extended 1,000 feet.

No. 9 level north of angle deep was extended 1,000 feet.

No. 11 level north of angle deep was extended 600 feet.

South Side.

No. 11 level north was extended 1000 feet.
No. 12 level north was extended 700 feet.
No. 11 level south was extended 250 feet.
No. 12 level south was extended 600 feet.

Headways.

No. 3 headway off No. 9 north level of angle deep—500 feet.
Barrier headway off No. 10 north level of angle deep—600 ft.
No. 1 headway, south of angle deep—500 feet.
No. 2 headway, south of angle deep—200 feet.
No. 1 headway, off No. 10 level, south of angle deep—600 ft.
No. 2 headway, off No. 10 level, south of angle deep—300 ft.

South Side.

No. 3 headway, off No. 11 north level—900 feet.
No. 4, headway off No. 11 north level—300 feet.
No. 2 headway, off No. 11, south level—700 feet.
No. 3 headway, off No. 11 south level—700 feet.
No. 1 headway, off No. 12 north level—300 feet.
No. 1 headway, off No. 12 south level—300 feet.

Number of working places in the mine—130 rooms, 6 pairs of levels, 7 pairs of headways and 40 pillars. The angle deeps have been driven 3600 feet under the sea. The shore line runs somewhat parallel to these deeps, the distance from shore line taken at right angles to face of deeps, being 1300 feet. The face of No. 9 level north off angle deep is 3600 feet from shore line. driven under the sea.

Quantity of air in circulation—170,000 cubic feet a minute.

This mine was visited twenty-four times during the year

Improvements on Surface and in Mine.

There has been built an additional fan engine house, brick, with concrete floor. A Jenckes engine, 16 by 30 inches placed in it, ready to be coupled to fan should an accident happen to the engine now in use.

In the mine, the large Northey steam pump has been replaced by two electrically driven turbine pumps, one a six-stage McDougall turbine pump, driven by one 100 h. p. Westinghouse motor, capacity 350 gallons a minute, and one three-stage McDougall turbine pump, driven by one 100 h. p. Westinghouse motor, capacity 400 gallons a minute. These pumps are giving excellent results.

The reservoir at the mine has been enlarged to about four times its former capacity.

Quantity of powder used—79,046 lb. compressed bull-dog and 221 lb. excellite, making a total of all kinds—79,267 lb.

Dominion No 12 Colliery.

There were 124 men employed at this colliery—90 men in the mine and 34 on the surface. The output during the year was 26,400 tons. There were 5,560 lb. of excellite powder used at this colliery.

Development Work During the Year.

On the 25th of September, 1907, the location of the slope was decided on; the land was cleared and the slopes started.

Development up to 30th Sept., 1908, was as follows:

Main deep and back deep down, 1500 feet each.
Crop levels east, leaving 300 ft. to rise, driven 350 ft.. each.
Crop levels west, leaving 300 ft. to rise, driven 400 ft. each.
No. 1 levels, west, driven 425 feet.
No. 1 levels, east, driven 450 feet.
No. 2 levels, east, driven 125 feet.
No. 2 levels, west, driven 100 feet.

One pair headways, east from No. 1 level to crosscut from fan shaft, driven 725 feet.

One pair headways, west from No. 1 level to fan shaft, driven 725 feet.

Fan shaft sunk 44 feet.

Crosscut from the fan-shaft to the headways, 420 feet.

Pillars between slopes, 50 ft.
" " levels, 30 ft.
" " slopes and headways, 150 feet.
" " headways, 50 feet.

Number of possible working places, September 30th, 28 rooms and 8 levels and 4 headways.

Rooms to be 20 ft. wide, with pillars between, 15 ft.

Seven miles of railway were laid from Grand Lake to the mine, and the first coal was shipped over this road on the 22nd of August.

At the mouth of both slopes, concrete arches were put in, 74 ft. long, 7 1-2 ft. high, 11 ft. wide and 14 inches thick.

Improvements.

Warehouse—size 60 feet by 30 feet.
Lamphouse—size 33 feet by 18 feet.
Put lamps in mine August 1, 1908—103 lamps in use.
Wash house—size 16 by 13 feet. 126 clothes closets.
Stable—size 40 by 26 feet, 14 horses.
Machine shop—size 50 by 30 feet.
Carpenter shop—size 80 by 40 feet.
Compressor house—size 40 by 20 feet.
Boiler house—size 50 by 40 feet.
Bank—size 450 feet long, 50 feet high, 25 feet wide.
Office—size 15 by 30 feet.
Quantity of air in circulation, 30,000 cubic ft. a minute.
This mine was visited twelve times during the year.

DOMINION NO 14 COLLIERY.

Dominion No. 14 slope approaches were commenced last summer: hoisting from slope's July 25th. Two deeps are being driven, similar to No. 12, with crosscuts. Only one shift is employed and the slopes are down 360 feet. Dip 17.5 degrees at start—now only 14.5 degrees.

Temporary buildings, such as wash-house, warehouse and workshop, have been erected. Two 50 h. p. Matheson portable boilers are in use, with a 25 h. p. Jenckes engine and three 7 by 4 1-2 by 12 inch Cameron pumps.

Sydney No. 1 Colliery.

There are 749 men and 84 boys employed at this Colliery—588 men and 74 boys work in the mine and 161 men and 10 boys on the surface. The output during the year was 253,900 tons. Of this amount 133,297 tons were mined in pillars. Quantity of powder used at this colliery, 19,021 lb. There are 168 working places in the mine. The coal is mined with hand picks. No. 1 level, north, known as Shinners level, was abandoned about eighteen years ago. This was re-opened, retimbered and the road re-laid in, a distance of 4,000 feet. The face of this level is 6,000 feet from the shaft-bottom. The opening of this level gives a new lease of life to Sydney No. 1.

No. 2 level, north, which was also abandoned twelve years ago, has been re-opened, re-timbered, road relaid, and a tail-rope system of haulage put in. This level is in a distance of 3000 feet from main deep. There is a large area of coal to the rise of this level. A crush took place in this section some years ago and it was abandoned. It is the intention of the management to recover all this coal, by driving a set of deeps from Shinner's level, inside the crush, down to No. 2 level. By sinking these deeps, they will recover a large area of coal that was abandoned years ago. An endless haulage-system is to be installed on Shinner's level, to convey the coal to the main deep. The management deserves credit for the re-opening of these old sections and for recovering the large areas of coal.

The quantity of air in circulation is 71,000 cubic feet a minute.

This mine was visited fifteen times during the year

The officials of this mine are:

George A. Greener .....Manager
George Greenwell .....Underground Manager
David Brown .....Asst. U. Manager
Alex. McDonald .....Overman
Edward Lockman .....Overman
Duncan Jardine .....Overman
Charles Young .....Overman
Thos. Merritt .....Overman

Sydney No 2 Colliery.

This mine was closed down in October, 1904, the rails taken out and the mine allowed to fill with water. On the 16th of November, 1907 ,the mine was re-opened and a number of men employed to repair it and pump out the water. On the 7th of May, the mine was unwatered and on the 16th of June, the work of hoisting coal was started.

There are 92 men and 2 boys employed at this colliery, 72 men and 1 boy work in the mine and 20 men and one boy on the surface.

The output was 13,058 tons. Quantity of powder used, 4,099 lb. There are forty-eight working places in the mine.

Development Work During the Year.

No. 4 level, north, was driven 130 feet, and No. 4 level, south, was driven 200 feet.

There are 19 Hardy mining machines and one Whitcomb and Riley, American No. 9 machine.

The quantity of air in circulation is 22,000 cubic feet a minute.

This mine was visited six times during the year.

Sydney No. 3 Colliery.

The output at this colliery during the year was 299,374 tons, and 46,902 lb. of bull-dog powder were used to produce this amount.

There were 529 men and 54 boys employed at this colliery; 434 men and 53 boys work in the mine and 95 men and one boy on the surface. There are 124 working places and the coal is mined by machines. There are forty-two Ingersoll machines in the mine.

Development Work During the Year.

Main deep was extended 1216 feet.

No.	7	level,	south,	was driven	150	feet.
No.	8	"	"	"	590	"
No.	9	"	"	"	605	"
No.	10	"	"	"	1100	"
No.	11	"	"	"	940	"
No.	12	"	"	"	305	"
No.	11	"	north,	"	400	"
No	12	"	"	"	220	"
No.	1	"	off angle deep		330	"
No.	2	"	"	"	120	"

Total length.....47760 feet of narrow work driven during the year.

Quantity of air in circulation, 56,000 cubic feet a minute.

This mine was visited twelve times during the year.

SYDNEY No. 4 COLLIERY.

There are 78 men and 5 boys employed at this colliery, 60 men and 3 boys work in the mine and 18 men and 2 boys on the surface.

The output during the year was 10,739 tons and the amount of powder used 4,229 lb. bull-dog. There are twenty-two working places and four Sullivan electric mining-machines C—E—6—in this mine.

Development Work During the Year.

The slope was sunk 1320 feet.

No.	1	level,	south,	was driven	348	feet.
No.	2	"	"	"	230	"
No.	1	"	north	"	288	"
No.	2	"	"	"	105	"

Quantity of air in circulation, 14,847 cubic feet a minute.

This mine was visited fourteen times during the year.

The officials are:—

William Tobin .....Manager
Robert Dixon .....U. Manager
Hugh McLellan .....Overman

Sydney No. 5 Colliery.

There were 207 men and 13 boys employed at this colliery during the year, 184 men and 12 boys in the mine and 23 men and one boy on the surface.

The output during the year was 92,729 tons, an increase over the previous year of 13,229 tons. The management expect to increase this output fifty per cent next year. Quantity of powder used at this colliery was 20,991 lb. of bull-dog. The coal is mined with hand picks. There are sixty-nine working places. The main level south was extended 200 feet and main level north, 402 feet. North main headway was driven 363 feet and a deep was driven from the main level 1100 feet through the pillars to Sullivan level. This opens up a large field of coal on the north side. There is one thousand feet of a working face above the main level and eleven hundred below the level, making a total length of 2100 feet from Sullivan level to the top of the headway above the main level. A new system of haulage has been adopted to haul the coal from the deep that was driven to Sullivan level. Another bull-wheel has been connected with the main haulage rope and a friction drum attached to it. This works well. The management deserves great credit for re-opening this old mine that was abandoned for thirty years.

This mine was visited twelve times during the year.

The officials are:—

Robert Robertson .....Manager
John Hunter .....U. Manager
George Slaven .....Overman

The Mackay Mining Company, Limited.

There are 15 miners, 19 laborers and 1 boy employed at this colliery. The output for the year was about 15,000 tons. The

slope has been sunk 396 feet: total distance from the surface, 996 feet. The output is about 50 tons a day.

Improvements on Surface—A branch of the I. C. R., 1800 feet, has been built, connecting the mine with the main line of the railway. A bankhead has been erected 550 feet long. The hoisting engine places the full cars at the scales, which are at the centre of the bankhead. A stable has been built with accommodation for six horses. Also forge, machine shop, and fan-house, with fan, capacity twenty thousand cubic feet, Sheldon Manufacture, Galt, Ontario. A Gates return tubular boiler, brick set, capacity 125 h. p. has been erected. A wash-house has been built and a power-house, in which is installed 60 h. p. Leonard-Ball engine, which is belted to a 45 kwt. Westinghouse generator. All the buildings on surface are wired and are lighted by electricity. The mine has been wired for electric power, and there is a Sullivan electric chain coal cutter in use. The development work is driven with hand picks. The boiler has been supplied with water from a bore-hole, and two 2000-gallon tanks have been built for storing the water. This water has not been suitable, having caused damage to the boiler, and the Company is now putting in a water main 4000 feet long to connect with the water system of the Town of North Sydney.

The height of the coal at the face of the deep is 4 feet 4 inches. This coal meets with a ready sale for steam and domestic purposes. The main pump in the mine is a "Fairbanks-Morse. Total quantity of water discharged in twenty-four hours, about 2000 gallons. Twenty new boxes have also been built.

Quantity of air in circulation, 12,900 cubic feet a minute.

William S. Wilson is manager and David Rorison, underground manager. This mine was visited fourteen times during the year.

The Colonial Coal Company, Limited.

This is an incorporated company, organized to purchase and operate the areas numbered 214 and 220. The property was once worked by the Toronto Coal Company. The mine is situated about half a mile from the Little Bras d'Or Bridge, on the Bras

d'Or Lake. The mouth of the slope is within less than two hundred feet of the waters of the Little Bras D'or, and for vessels drawing up to nineteen feet, the shipping situation is unexcelled. The survey of the new extension of the I. C. R. is within three quarters of a mile of the mine.

The company have cleaned out the old slope and re-timbered it, and laid a haulage road of 28 lb. rails as fast as the pumping has progressed. A Dean 8 by 8 inch high-service duplex pump, six inch suction and four inch discharge, and a pump supplied by the Pulsometer Engineering Company, two inch discharge, are installed in the mine for the main pumping. The company have been seriously hampered for lack of water, owing to the exceptional drought during the summer months, but have completed a dam where ample water can be impounded, and have a pump line from the dam to three tanks near the boiler house; water is delivered to the tanks by a 2 1-2 by 4 by 2 inch Knockhole Duplex pump, and the tanks have a capacity of 5,000 gallons. A hole 100 feet has also been bored for water.

The water in the slope has been lowered to the 400 feet level, and with the present ample water supply, the Company expect to complete the pumping out of the workings within three months.

The plan of the workings show three parallel deeps, with crosscuts driven every sixty feet. The deeps, as far as the water has receded, show a rib of coal six feet thick, clean from roof to pavement, and of very good quality, without parting. The roof is an exceptionally hard calcareous sandstone, about 23 1-2 inches in thickness, being overlaid by heavy bedded ordinary sandstone. In the old workings sections are seen, more than a quarter of an acre in extent without any timbering. These sections were found filled with slack coal, which the company is selling to the local trade. This slack coal was covered with a film consisting of clay and oxide of iron; being the precipitation from the pit water that has covered these workings for so many years. This film, or pigment, has acted as a preserving blanket, and when removed the slack coal was found to be in perfect condition; and otherwise entirely free from sulphur. Samples of the oxide of iron clay have been submitted to paint manufacturers, who have made offers for a quantity.

Safety lamps have been used during the pumping, but the workings have been found perfectly clear of gas. The ventilation

is very good, air being carried through the workings from an air shaft that cuts the coal on the top lift south, and the return current is forced up the main deep by leaving the stoppings on the north side of the pit intact. All that portion of the workings that have been unwatered are in good, safe condition.

Work on the surface has been carried on vigorously. A 25 h. p. Robb, brick-set boiler, and a 100 h. p. Leonard, brick-set boiler, comprise the initial power plant. A double 5 by 7 inch reversing haulage engine, geared 5 to 1, has been installed, holding 1200 feet of one inch, 10 wire hoisting rope, the rope being furnished by the Dominion Wire-Rope Company. An office and workshop are on the ground. A temporary road, 3 feet 8 inch gauge, has been laid from the slope-mouth to a temporary pier, in order to load small schooners with slack coal.

An independent hoisting engine handles the full and the empty boxes from the pier to the slope mouth. The foundations for the boilers and hoists are concrete, and a boiler house is under construction. Pumping is carried on continuously by a double shift of firemen and pumpmen. About a dozen men are employed.

The company are making plans for a three compartment pocket pier, to be built in the early spring, and with the mine pumped out, should have no difficulty to raise the 200 tons a day they calculate to ship during the 1909 season.

The outcroppings of the No. 3 seam and the Matheson seam, occur above the Collins seam, which the company are now unwatering, and the conditions are such that the coal from the upper seams can be delivered by gravity to one bank-head, which is the method the company purpose to pursue in handling the coal from these seams.

Sydney Coal Company.

The output at this colliery during the year was 5000 tons, an increase over last year of 2000 tons.

This mine is in good condition. A new traveling road was made, which is well timbered. The air-shaft was enlarged to twice its area, and has greatly improved the ventilation. A portion of the drift has been stripped and re-timbered. The mine is principally worked for local sales.

Hugh G. Campbell is in charge of this mine.

The quantity of air in circulation is 6,000 cubic feet a minute.

This mine was visited nine times during the year.

Report of Fire at Sydney No. 1.

A shot was fired about noon on Wednesday, September 9th, 1908, in a room in No. 5 lower section, south, on the south side of No. 1 colliery undersea workings.

The shot was fired by Mr. Thos. Price, a duly certificated shot-firer, who had eleven months experience as such, and was previously a miner. The shot was well prepared and "bull-dog" powder was used—powder made by Curtis and Harvey of London. The shot flamed and the shotfirer put out the flame with a piece of canvas; and remained in the room and examined around shot for about five minutes after firing.

The miners, John Mann and Adam Allen, filled a box of coal after the shot was fired and then came out of the room to the deep for their dinner. Norman Ludlow, the chain-runner, smelled smoke and went into the room and found it full of smoke. He gave the alarm to the miners. Allen and Mann went into the room and began turning over the coal, but they could not get it all turned over owing to smoke, and they sent for Mr. Edward Lockman, the overman in charge of the section. Mr. Lockman arrived on the scene about 12.20. He sent for help and water and tried to extinguish the fire, shifted the brattice into the centre of the room, afterwards put a brattice door across the deep and sent for Mr. Robt. Robertson, the Underground Manager.

Mr. Robertson was at the water-guage on the north side of the pit, and arrived at the scene at 2 o'clock. He, with some men, went as near as they could get for smoke, returned to No. 5 level and got the pipemen to disconnect the pipes between the two donkeys and began to lay them down the outside deep; laid five lengths when smoke drove them out to the main deep. He sent Lockman to telephone for Mr. Johnstone. Mr. Johnstone and Mr. Greenwell arrived at the scene about 4.30 oclock, and tried

to get into the room by going around the intake, encountered smoke, put stopping in the intake, and went to the section above the fire to find why smoke was returning in the intake.

Mr. Greener got to No. 5 deep at about 6 oclock, and met Messrs. Johnstone and Greenwell. Mr. Nicholson, the Inspector, arrived between 6 and 7 o'clock. Johnstone, Nicholson, Greener, Greenwell and McDonald, the Overman, got along No. 5 level a short distance; failing in this, Nicholson, Greener, Greenwell, and McDonald made an attempt to reach the fire in the intake side. McDonald and Greener keeping back, Nicholson and Greenwell went as far as a fall at the end of a room opposite the room where the fire was.

After various consultations and suggestions the men were divided into shifts, with Messrs. Greener, Nicholson and Greenwell in charge; and after making a very determined effort, succeeded in reaching the seat of the fire near enough to erect small dams in the immediate neighbourhood. In the meantime, every preparation was made for the flooding of the whole section, if such a measure should have to be employed.

The water was pumped into the small space and eventually quenched all the fire, which had at no time reached beyond the room where it had ignited, and which was only about 35 feet off the deep. ....

Volunteers with Draeger machines from the Dominion Coal Co., headed by Messrs. McKenzie and Mahon, arrived at the scene 7 a. m. Friday, and rendered all the assistance possible, being of particular use in satisfying the management as to the magnitude of the fire, and were of great assistance in erecting brattices in the immediate vicinity of the fire. c

Six o'clock Saturday morning, the place was flooded, and on Tuesday the mine resumed work on the south side; on Wednesday the whole mine was at work; only 700,000 gallons of water was allowed to go into the mine, and only three working places have been lost, and these only for a few days.

As to the cause of the fire, we find that while there is no person guilty of negligence or violation of any law or

Special Rule, but the management deemed it proper to issue the following instructions as a greater safeguard in the future:

Special Instructions to all Shotfirers in the employ of the N. S. S. & C. Co., Ltd.

1. The shotfirer shall satisfy himself that all holes are properly bored and reasonably safe, before firing.

Should a shot flame, the shotfirer shall take the following precautions

2. Stand by the place until all the coal is turned out and has satisfied himself that there is no fire.

3. Make a verbal report to the official in immediate charge of the section, and enter it in the report book when he reaches the surface.

I enclose herewith a description of the safety catches at the shafts of Sydney No. 1 colliery.

Yours Truly,

NEIL A. NICKERSON,
Deputy Inspector.

Mr. N. A. Nicholson,
Deputy Inspector of Mines,

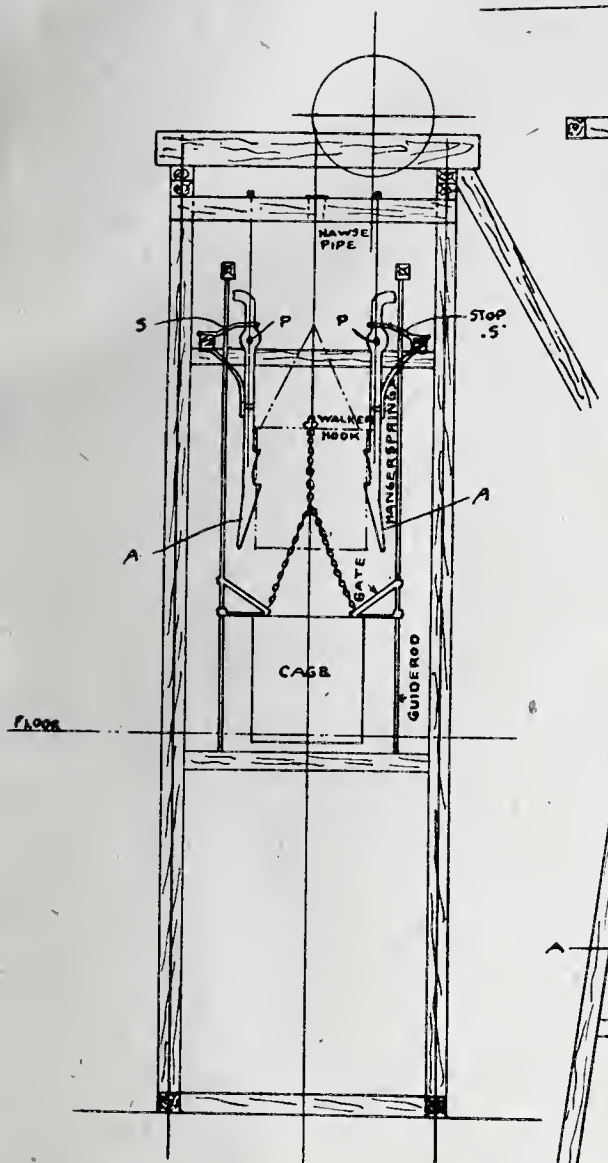
Sydney Mines, C. B.

Dear Sir,—Referring to our drawing C—467, Fig 1 shows the general arrangement of auxiliary safety catches used in connection with the coal cage. They are known as Walker's detaching hooks. The hook failing to hold the cage in case of an overwind, it is the intention that the cage will drop back and be caught at four points by the catches marked A. Two of these engage, at each end of the cage, the top band of the cage. The handspring T keeps an inward tension on these catches within limits that may be adjusted by the stop marked S, arranged so that the cage is always free to be drawn in an upward direction through the catches; but once having passed through, the catches close together and prevent the cage from coming back.

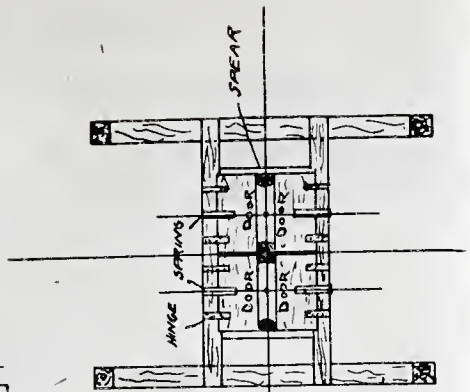
Fig 2 shows safety doors used in connection with the Walker hooks on man shaft No. 1 colliery. The doors are placed about four feet below the bottom of the cage, when the Walker hook has engaged the hawse pipe.

The doors are built of 3 inch hardwood, completely covered on the bottom and around the edges with steel plate, forming a smooth surface with the tackling chain of the cage to work against. In the event of an overwind, these doors are forced open by the chain and cage passing through and are closed by means of a spring. This design can be used only where centre spears and buntons are used.

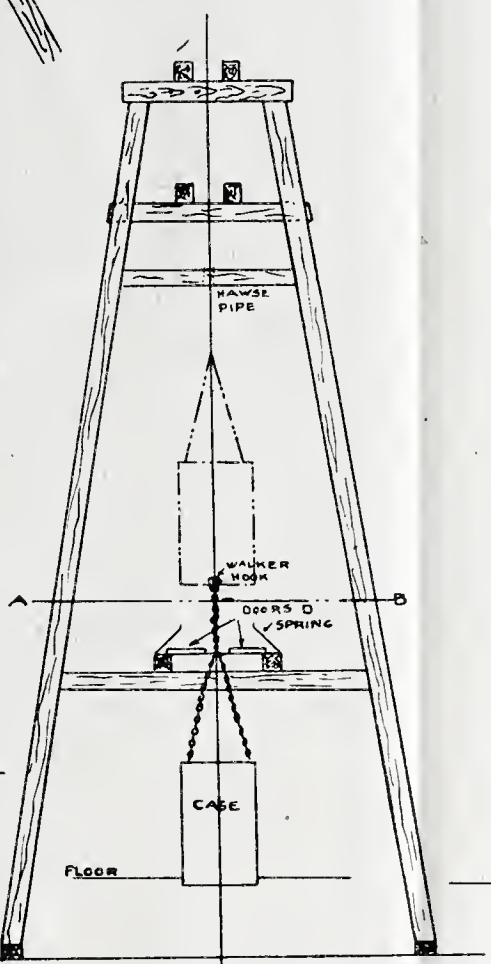
Fig 3 shows the safety catches used in connection with the Walker hooks on coal shaft at No. 1 colliery. Eight forged steel-patches are placed in a vertical position in the centre of each end of the cage and spaced about three feet apart, vertically. They are supported between two 4 by 6 by 3-4 inch angle irons fastened in a number of places to the head frame. The catches



COAL SHAFT HEADFRAME
COLLIERY Nº 5
FIG-1



SECTION A-B.



MAN SHAFT HEADFRAME
COLLIERY Nº 1
FIG. 2

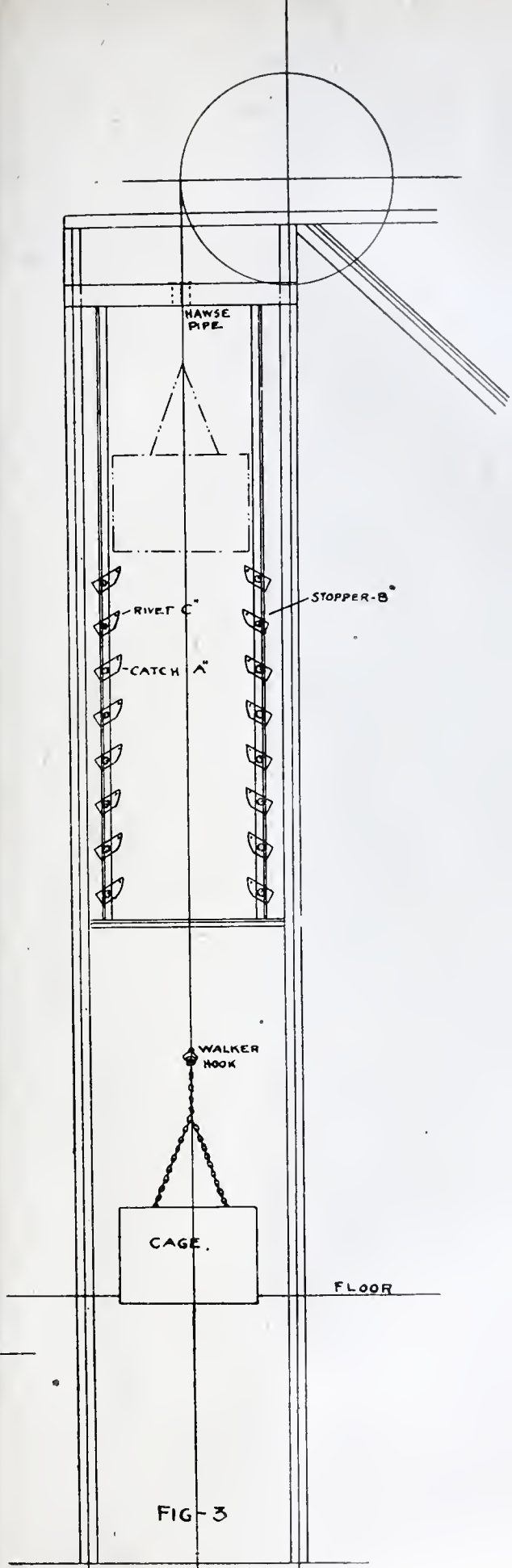


FIG-3

COAL SHAFT HEADFRAME
COLLIERY NO 1

COLLIERY Nº 1 & 5
SAFETY APPLIANCES
ON HOISTING SHAFTS
NOVA SCOTIA STEEL AND COAL Co LTD
SYDNEY MINES. N.S.

SCALE $\frac{1}{8}$" = 1 FT

are steel forgings hung by the pin and are prevented from turning over the centre by means of a rivet marked C, and take the weight off the cage by means of stopper B.

Yours Truly,

NOVA SCOTIA STEEL & COAL CO.,
John Preston.

Date.	Name of Mine	Name of person injured	Age.	Occupation.	Remarks
1907					
Oct. 17..	Dom. No. 1....	Mich. McMullan	15	Driver	Box ran over hand. Finger amputated.
" 22..	Sydney "	Andrew Eghart.	38	Miner.....	Injured slightly by trip on haulage road.
Nov. 6..	Dom. "	Pietro Guerioro.	20	Loader.....	Jammed between box and prop. Fracture of clavicle.
Dec. 4..	Sydney " ...	Ellis Baxendale.	42	Miner.....	Fall of stone. Fatal.
" 21..	" No. 3....	F. McKinnon..	21	Chain runner.	Runaway box. Inflicting injury causing death.
1908					
Jan. 23..	Dom. " 1....	Wm. Corbett...	40	Miner.....	Fall of coal, shoulder dislocated.
Feb. 7...	Sydney No. 5..	Charles Kelly..	24	Miner.....	Grab on rope broke. Leg broken.
" 13...	" " 1..	Mal. Stewart...	38	U. Manager..	Overwind man-shaft cage. Fatal.
" 13...	" " ..	John D'Orsay..	43	U. Manager..	" " " "
Mar. 23..	McKay Mine ..	William Carey .		Miner.	Fall of stone. Back injured.
" 30..	Dom. No. 1 ...	Antonio Severio	30	Loader	Fall of coal from face. Leg broken.
April 24.	McKay Mine ...	R. McDonald...		Chain runner.	Fell off trip. Slightly injured.
May 18..	Sydney No. 3 ..	Clement Nichol	19	Loader	Caught in loop of rope. Leg broken.
June 4 ..	" " ..	Thom. Venedick	27	Loader	Jammed between two boxes. Collar bone broken.
" 9 ..	Dom. No. 1....	John C. Bartlett	48	Loader	Fall of coal. Fatal.
" 17 ..	" ".....	Leofoldi Crotti.	25	Loader	Fall of coal from roof, boom fell on him. Hip injured.
" 22.	" ".....	Thomas Clarke.	33	Shiftman	Fell while carrying boom. Leg broken.
July 8...	" ".....	Albert Kelly...	35	Miner.....	Fall of stone from roof. Leg broken.
" 9...	" ".....	Angus Bryden..	25	Miner.....	Explosion of relighter. Leg injured.

" 25..	" ".....	H.Hennessey ..	34	Miner	Fall of stone. Hip and knee injured.
" 29..	" ".....	G. Girdinetti...	27	Loader	Fall of coal from face. Fatal.
Aug. 5..	Sydney No. 3..	JWolstenholmes	17	Pusher	Struck by box. Hip injured.
" 14..	" 1..	James Cullen...	38	Miner	Fall of coal. Internally injured (not serious.)
" 21..	Dom. No. 1....	Neil McPherson	49	Miner	Struck by empty box. Leg broken.
Sept. 18.	" ".....	Walter Brown..	30	Miner	Fall of coal from face. Leg broken.
" 30.	Sydney No. 3..	D. Fitzgerald...	27	Landing tend.	Leg caught between grabs. Ankle dislocated.

SPRINGHILL, N. S., November 4th, 1908.

HIRAM DONKIN, ESQ.,
Deputy Commissioner and Inspector of Mines,

HALIFAX, N. S.

DEAR SIR:—I have the honour to submit to you the annual report on the coal mines in the Cumberland district, for the year ended September 30th, 1908.

No. 2 SEAM, SPRINGHILL, N. S.

In this seam, pillar work has been continued on the 2400 feet level to the rise: 1800 feet of railroad pillars and other pillars have been extracted.

Below this level some narrow work was done and chutes driven to the rise. The east half-way level was extended 886 feet and is in a total distance of 6296 feet from No. 5 slope. This level was considered to be driven beyond the limit, and pillar work was commenced between the half-way level east and 2400 feet level. The lower level was extended 1100 feet and is now in a total distance of 4644 feet. Several troubles were met in this section of the mine. The lower or 3300 feet level west from No. 2 slope was extended 2028 feet and is now in a total distance of 2971 feet.

The east level on this lift was extended 1653 feet and is in a total distance of 2853 feet. On March 8th, the Aberdeen fault was reached, which retarded the progress of this level for several months. On June 1st, a tunnel to No. 1 seam was started 800 feet east of No. 2 slope. On October 2nd the bench coal of No. 1 was struck which proved to be more than four feet thick of good quality, and clear of stone and splint. On the west side of this lift, from the 2850 level to the 3300 level, there has been a continuous occurrence of faults which have curtailed the output of the mine. The main level was more fortunate than the rest of the places, although bounded on both sides by large faults, it remained in good coal. The lodgments east and west have been completed: making them more than 2000 feet in length. Concrete dams have been erected at each side of the slope, and are connected by 12 inch cast-iron pipes with 12 inch gate-valves outside of each dam, and one 12 inch space-pipe with blank flange for cleaning lodgment.

A new pump-house has been erected level with the dams, and a Blake pump installed. Two lines of pipe, one six inch line for steam, and one eight inch line for discharge, have been laid from the 2400 feet level to the 3400 feet level. Before those lines could be connected, 500 feet of pipe-bord had to be cleaned and re-timbered; this mine having been previously flooded. Repairs in all sections of this mine are being continually carried on. On March 3rd, two separate concrete stoppings were erected on the 400 feet lift, to cut off all communication with the supposed fire district. Those stoppings were placed at the head of Nos. 9 and 22 chutes. Several other stoppings have been erected during the year—in fact the work is still going on.

The fan-way, pipe-bord, and main hoisting-slope, have received attention and are now in good order. I visited this mine about thirty times during the year and found it in good condition. The ventilation is as good as can be expected. This is an extensive mine and it is difficult to have all places ventilated alike, owing to so many faults. The average amount of air in circulation is 87000 cubic feet a minute.

Improvements—No. 2 Surface.

A new six-inch Jeffrey cable-conveyor was installed to convey culm from a rotary screen to the boiler plant and storage pile. This system is operated in two sections: one section runs through the boiler house and the other to the storage pile. The full length of this conveyor is 498 feet. Power is supplied by a horizontal engine, cylinder 8 by 10 inches. The bankhead frame was extended in length 266 feet to give an increased landing space for a rake of twenty cars. This installation will not be completed until next spring. The present bankhead was repaired and the brow was raised 15 inches to give an increased grade of 1¼ p. c. toward the tipple. The empty road was raised to a corresponding height.

Winding Engines.

An improvement has been made in the winding engines: new pistons were put in with extension rods, cross-heads, and slides to decrease the friction of piston on the bottoms of the cylinders. This change has made a decided improvement in the working of the engines.

No. 3 Slope—Springhill.

In this slope, work has been continued from the 2600 feet level east and west in the under and overlying seams. Narrow work has been extended on main slope, 3800 feet east and west, and also on the 4800 feet levels. The 3800 feet level was driven 1866 feet and is in a total distance of 8866 feet. The main slope was extended 310 feet and is now a total length of 1200 feet. Levels have been broken off at 500 feet and at 1000 feet, and are extended from 270 feet to 420 feet respectively, with mine-bord and lodgment below. The 3800 feet mine-bord has been cleaned and timbered up for several hundred feet, and dams have been erected on each side, connected by eight-inch cast-iron pipes, and a Cameron pump installed. Those dams act as reservoirs to hold all leakage from above the 3800 feet level: thus keeping the 1000 feet lift perfectly dry. This change requiring more steam, 700 feet of six-inch steam-pipe was replaced by eight-inch pipe, and coated with asbestos.

I visited this mine thirty times during the year—air in circulation 80,000 cubic feet a minute.

No. 3 Slope—Surface.

At No. 3 boiler-plant, the 6-inch Jeffery coal-conveyer was taken out and replaced by a 10-inch conveyor of greater length, and a capacity of 100 tons an hour. This conveyor carries the slack from four shaking screens to a box-car chute through the boiler house, where it supplies a battery of twelve boilers. The full length of this conveyor is 348 feet. Driving power is supplied by two engines—one vertical engine 8 by 10 inches, and one horizontal, Robb-Armstrong engine 11 by 12 inches.

Winding Engine—No. 3.

The same improvements were made in this engine as were made in the pistons of No. 2 engine—the engines are duplicates.

A new repair shop 20 by 40 feet was erected about halfway between No. 2 and No. 3, for the purpose of repairing mine-cars for both slopes.

Minudie Mine, River Hebert, Cumberland County.

This mine has worked steadily during the year. The slope has been extended 400 feet and is now down 2100 feet from the surface. Levels have been started at 1900 feet on both sides of the slope and are now being extended. A 62-feet upthrow-fault was cut through on the 1200-feet level, east.

I cannot say anything about the quality of the coal, at this point, as they have just reached the other side of the fault. No improvements have been made at this colliery, other than those required to facilitate the hauling of the output. The ventilation is good, the average quantity being about 2400 cubic feet a minute, which is sufficient.

Scotia Mine—Maccan, Cumberland County.

This mine was taken over by the Great Northern Coal Company of New York, on March 16th, 1908. The slope was sunk in the top-coal near to the boundary, when the present Company began operations. They drove a slope from the bottom level of the old slope, in the bottom or bench coal up to the surface. They are now driving levels and chutes, so as to get all the bench coal that is available.

Surface.

Some new buildings have been erected, such as offices and stables and a new bankhead is being built. There are about 10 men employed in this mine and the output is small. The mine is in good condition. I have visited it regularly during the last year

The Eastern Coal Company, Limited,

Maccan, Cumberland County, N. S.

Considerable progress has been made in developing this Company's mines at Maccan, during the year ended September 30th, 1908. The tunnel begun last year in the ventilating slope, which is No 1, has been driven through the down-throw fault of 60 feet to the top coal at 700 feet, and to the bottom coal at 732 feet from the surface, and at a vertical depth of 408 feet and 430 feet respectively. From this point the sinking has been continued in the coal—I might say in disturbed measures—a farther depth of 400 feet, or a total distance of 1132 feet from the surface. Below the

fault, four cross-heads are being driven in an easterly direction from No. 1. A tunnel rising 1 in 1.15, or at 41½ degrees, is being driven to meet No. 2, or main haulage slope. The distance is about 400 feet, 120 feet of this distance are completed. A traveling slope, No. 3, has been set out parallel to Nos. 1 and 2 from a cross-head, and has been driven 140 feet in the coal: it will continue to the fault.

From the cross-head, a level tunnel is being driven in a southerly direction in the line of the dip, which is about 44 degrees, to prove the overlying strata. Two small seams of coal, 13 inches and 14 inches thick respectively, with 29 inches of clay parting, have been cut through and the tunnel is now in 230 feet. From No. 2 cross-head, a place has been started, and is being driven up in the coal to meet the main slope tunnel at No. 1 cross-head. A level is also being started in a westerly direction. Electric signals have been installed in the slope and the road relaid with heavy steel rails; but the temporary hoisting-engine is too small to wind any great quantity of coal, owing to the amouut of rock and stone that is coming from the tunnels in progress. No. 2 cross-head has been continued beyond No. 3. slope, as a level, with another level for ventilation, 600 feet, to open out for wide-work.

Surface.

The reservoir is finished and at this dry season is overflowing. It has a capacity of 9 million gallons. A dynamo has been installed, and the works are now lighted by electricity. A Deeming triplex pump and electric motor have been erected in a house provided for them on the bank of the reservoir, and are now supplying the water to the service pond from which the works draw their supply. The bankhead, screens, picking belts, engine, and other machinery, are now complete, and are connected with the Intercolonial Railway, by a convenient siding

A new wash-house for the miners, has been built.

JOGGINS MINES, CUMBERLAND COUNTY, N. S.

The last year has seen great changes at this mine. A new slope has been driven a distance of 2400 feet and levels broken off at 1800 feet, and at 2300 feet. I may mention that sinking operations began at this slope on September 9th, 1907, and coal was hoisted onto the new bankhead on October 5th, 1908, a little more than a year from the time the first sod was turned.

The 1800-feet level east, is now driven in 450 feet and gateways broken off to the rise. The east side of this mine will be entirely under-sea, and will be worked by the bord and pillar system. The west side of the mine will be worked longwall, from balances and gateways. The strata have proved regular in the direction in which the slopes are driven—four feet of coal showing everywhere above the clay. Three slopes have been driven the entire distance. The main slope is 10 by 10 feet in the clear, and timbered with good sound timber, two feet centres. Very little water has been met in sinking and everything indicates that the mine will be exceptionally dry. A new bankhead has been erected for an out-put of 1500 tons a day. This bankhead is equipped with revolving tipples, weighing hoppers, distributing chutes, shaking screens, and picking tables 5 by 45 feet, with swinging jibes. The hoisting is now done by a tail-rope from a first-motion double-hoist 14 by 20 inch cylinders. The bankhead is intended for endless haulage and this system will be put in as soon as possible. A new machine-shop, with the necessary equipment, has been built.

The Company has placed a McKiernan air-compressor with a capacity of 1200 cubic feet, free air a minute. The pumping will be done by compressed air. The pumping plant now consists of one Cameron pump, 18 by 16 by 36 inches, one Worthington duplex-pump, 14 by 5 by 10 inches, and one Northey duplex-pump 7½ by 3½ by 10 inches.

Any one of these pumps can raise all the water that the mine is making. Five boilers have been put in—two batteries of Lancashire and one Rob-Economic—giving a total of 800 boiler horsepower. A temporary eight-feet belt-driven Sturtevant ventilating-fan has been placed, to be used while the new permanent 18 feet fan is being erected.

Chignecto Mine, Cumberland County, N, S.

Work was steady at this mine during the last year. The 1400 feet levels are in more than 3000 feet on both sides of the slope, and are stopped at the present time. Two double balances, Nos. 5 and 6 are now operating on the east side. Pillars are being extracted in No. 5 balance, and bords are being driven on both sides of No. 6 balance. On the west side of the 1400-feet level, pillars are being extracted on No. 4 balance, and both sides of No. 5 are working. Those places are worked on the longwall system which has been carried on successfully since last March. The downcast

has received a good deal of attention by being thoroughly cleaned and retimbered from the 600-feet level to the 1400-feet level, and new stoppings put in. The sinking was completed to 1900 feet, and levels driven 475 feet and 450 feet respectively.

No. 1 balances, on both sides, are being driven: all balances on this lift will be double. A lodgment has been completed, 120 feet long and about 80 feet below the 1400-feet levels, and has a good concrete dam.

An electric pump has been placed to pump water to the 600-feet lift.

Surface.

The fan is now equipped with an electric motor, and the mine is well ventilated.

STRATHCONA MINE, CUMBERLAND CCUNTY.

The mine worked steadily the last year. The slope was sunk 130 feet during the year—and is still going. This slope is down now 980 feet, and is about 150 feet from the boundary. No. 4 levels are in 2376 feet, and are stopped at a fault that runs through the seam. No. 2 levels are in 2442 feet, and are now in to the same fault. No. 5 levels are broken off a distance of 200 feet from No. 4 level and are in a distance of 330 feet from the slope. Much brushing has been done, during the last year, in order to gain height. No. 2 level was brushed a distance of 1188 feet from the slope. An incline has been driven on the east side: it is up 264 feet, and two levels broken off, one east and one west. These levels are driven about 75 feet. There is also an airway driving from the top of this incline—it is up about 40 feet. This airway is to go through to the surface.

Surface.

Two reservoirs have been built to supply the works with water: one is 45 by 35 by 6 feet, the other is 75 by 35 by 5 feet. A wash-house has been built. The mine is now in fairly good order and well looked after by Mr. Nicholson, the Manager. The ventilation—for natural ventilation—is good.

Jubilee Mine, Cumberland County.

On the 7th of November, 1907, the present Manager, Mr. P. W. McNaughton, took charge of this mine. No. 1 and 2 slopes were then full of water, owing to the mine being idle for months. A start was made to pump the water out of No. 1 slope: about 350 feet down, heavy falls were found on the slope, timber down, timber broken, and roof broken, in some places, to a height of 15 feet. Heavy booms, and cribbing on top of timber, were put in, thus making a secure and permanent job. This had to be done for a hundred feet or more. They found the two upper levels west, so badly crushed that they had to abandon them. The new lower levels east and west, were in a condition so bad that they had to be retimbered and cribbed. On getting this work completed the boiler and pump gave out, at the same time, and before they could get them replaced, the mine again filled with water. It was the end of March before the mine was in shape again for work. The water is still being kept out, but there is no coal being hoisted for the market, since the mine was repaired.

No. 2 Slope.

This slope was pumped out in January, 1908, and sunk a distance of 100 feet, which makes this slope about 200 feet long. The coal is nearly four feet thick, and is divided by a band of clay which has decreased from 3½ feet to about 18 inches. The work done in this slope is of a permanent character. There are only two men employed at this mine, they are keeping the water out.

Fundy Mine, Cumberland County.

There are from two to four men employed at this mine, cleaning and extending the drain that leads to the shore. The government will thus acquire a large field of coal, and this drain will save the company the expense of pumping surface water. There has been no development work done in the mine in the last year.

DeBert Mine, Colchester County, N. S.

The work of developing this mine has been progressing steadily. The west level, of No. 1 seam, has been extended about 700 feet, and in its course an upthrow of about five feet was met; but the coal continues to maintain its thickness and quality.

In No. 2 seam, which I mentioned in my last year's report, the main levels are being driven east and west. The coal maintains its thickness of from three feet to three feet three inches. A return airway is being driven from the main level up to the surface: this airway will improve the ventilation of the mine. The output has been variable, ranging from ten to thirty tons a day. This mine has been hampered, as all small mines are, by the scarcity of steady miners, or a sufficient number of men to supply the places of pursistently unsteady workers.

Mr. Samuel Winters of Moncton, the enterprising president of this company, deserves much credit for the manner in which he has kept the work of development going. This energetic company should have a large and important colliery at DeBert, in the near future.

In conclusion I must thank all the coal operators in this district, and also their officials, for all information required and for strictly enforcing "The Mines Act."

I have the honour to be,

Your obedient servant,

A. V. CAMERON,
Deputy Inspector for Cumberland District.

Report of Accidents, Cumberland Coal Mines, for Year ending September 30th., 1908.

Date.	Name of Mine.	Name of Person Injured.	Age.	Occupation.	Remarks.
1907.					
Nov. 11.	Chignecto	John Corimer ..	50	Laborer	Caught between car and bankhead. Killed.
1908.					
Jan. 30..	No. 3 Springhill	Adam Davidson	38	Pusher down.	Fell into chute. Killed.
March 18	" "	John Mansell...	50	Shiftman....	Leg broken.
Feb. 30..	" "	George Bigney .	40	Miner.....	Fall of coal. Arm broken.
April 30.	" "	John Mckinnon.	34	Road Boss...	Caught between box and roof. Hurt internally
May 8...	" "	Edward Ripley.	30	Timber car'er	Fell into chute. Killed.
Aug. 13.	" "	Percy Jordan...		Pusher down.	Run over by rake. Killed instantly.

WESTVILLE, Pictou Co., N. S.,

November 14h, 1908.

HIRAM DONKIN, ESQ.,
Deputy Commissioner Public Works & Mines.,

Halifax, N. S.

Sir,—I have the honor to submit my report on the Pictou coal mines for the year ended September 30th, 1908.

The coal production of this County for 1908 shows a slight increase over that of 1907. I regret to have to report 27 accidents in the mines of this county for the last year, five of which proved fatal. The fatal accidents all occurred at the mines of the Intercolonial Coal Company—three in the pit and two on surface. Of the fatal accidents that occurred in the mine, one happened at the working face, and the other two were caused by moving boxes. The other two fatal accidents occurred on surface—one man was smothered with slack coal, while putting it into the boiler shed, and the other one was killed by an overwind, the trip going through the bankhead and into the boiler shed where the man was killed. The verdict of the coroner's jury in this case was that the accident was caused by an error in judgment on the part of the engineer; in the other four cases, no one was to blame.

Allan Shafts.

Work has been steady at these pits during the year. A connection was made between No. 1 and No. 2 shafts, on January 15th, 1908, which has greatly improved the ventilation in both shafts. The improvement in the ventilation has resulted in the disuse of the fan at No. 1 shaft. Three new overcasts have been made during the year, which splits the air into four currents, and has increased the quantity from 36,000 cubic feet a minute, in March last, to more than 60,000 cubic feet a minute at the present time.

The airways in the north-east side and in the south-west side have been cleaned out and enlarged. The shafts are under the daily charge of,

Harry E. Coll.....Superintendent
Simon Lott .....Manager
William Arthrell .....Underground Manager
Neil McLean .....Overman
Rod. Campbell .....Day Examiner
Thos. Scully..... .....Night Examiner
Harry Roberts .....Examiner No. 1 Shaft
John P. Lennon.....Examiner No. 1 Shaft

The level in the Ford-Pit seam, northeast, has been advanced about 1000 feet during the year. It went through a down-throw fault of about 20 feet causing a horizontal tunnel to be driven a distance of 200 feet to get to the coal which proved to be of very good quality. The level and counter-level have been driven in good coal for a distance of about 400 feet, where an up-throw fault was met—this fault is now being proved. The total distance of this level from the shaft, is 2300 feet. Two chutes are being driven up in this section and are in about 350 feet. Bords are turned off on each of these chutes. The coal is good in this section.

The main level in the Ford-Pit seam, on the southwest side was driven up a distance of 121 feet, that is, on the north-west side of the basin. A cross-cut incline has been put in to take the coal down from the main level and from a balance which has been driven up for a distance of 350 feet to a fault. Six bords have been driven into this fault. The fault runs southwest and northeast, and it appears to make a change in the courses of the dip and the strike.

There is not much work being done in the Cage-Pit seam. The level in the southwest side of the mine is against a fault, and has been advanced about 200 feet only. One balance was driven up 350 feet and six bords turned off. Three of the bords have been driven into the fault, the others are still working. One chute and back-head have been worked on this side, and three bords turned off. The fault in the Cage-Pit seam, in the southwest side, is supposed to be the same fault that is in the southwest side of the Ford-Pit. This fault is being proved in the Ford-Pit seam by a tunnel. A bore-hole was put through the seams from the surface and both seams were found to be all right.

No. 1 Shaft.

There has not been much work done in this shaft during the year, nearly all the work has been done in the Cage-Pit seam. A balance and back-head have been started on the northeast side, and is up about 75 feet. Two stone tunnels were driven a distance of about 200 feet and stopped. An airway was also driven from the east to the west side, so as to make a connection with he airway from No. 1 to No. 2 shaft.

On the southwest side, two balances and back-heads are being driven up. No. 1 balance and back-head have been advanced a about 700 feet. This balance is being driven for the purpose of tapping the English slope, and is now within about 500 feet of it. No. 2 balance and back-head are driven up a distance of about 500 feet. There is a large quantity of good coal gained in these two balances. It is as good quality of Cage-Pit coal as I have seen in any part of the field. Strange to say, the coal in the English slope is not good. About 200 yards southwest of the English Church, an opening was made last June, into what is called the old Carey-Pit; it was explored southwest and northeast for a considerable distance as well as some distance to the deep. It was found in a very good state of preservation, and free from gas. In the latter part of September, an opening was made in the old By-Pit. When the top covering was removed, some gas escaped; but after remaining open for two or three days, the pit was found to be perfectly clear.

The mine is in fairly good order, only one or two sets of the shaft timbers were broken: these have been repaired. It is the intention of the management to make further explorations at an early date.

The total number of tons of coal raised during the year in the Allan Shafts was 88,009.

The average number of miners	88.58
" " " loaders	70.03
" " " shiftmen	102.
Boys.....	13. 8

Surface.

Average number of skilled laborers	28.2
" "	89.33
" boys	.3

Explosives.

The quantity of explosives used during the year was—Saxonite, 111 1-2 lb., Monoble, 20,183 1-2; Detonators and caps, 39,766.

All shots in the Acadia Coal Company's pits are tamped with surface clay brought into the mine in boxes to each landing and balance. It is then distributed in small boxes to the men that use explosives.

The safety lamps used in both shafts are the Wolfe or Patent-Lighter with magnetic lock. These lamps have been used here exclusively since operation began in 1906. 285 lamps are in use at the present time, and 25 are in reserve. There are no pumps used at this colliery: all water is handled by means of a tank in both shafts. The quantity of water does not exceed 250,000 gallons a month.

No. 2 shaft is equipped with a Walker fan 24 feet diameter, with a speed of 65 revolutions a minute. It is driven by a Robb-cross-compound engine 13 by 24 by 24 inches. The average quantity of air produced is about 60,000 cubic feet a minute, against a water guage of 2 1-4 inches. No. 1 fan is not in use.

No. 2 Surface.

The surface improvements at this shaft are: one new 316 h. p. Sterling boiler. Endless haulage for conveying the coal from No. 2 shaft to the new bankhead at No. 1 shaft. One new 20-inch main steam-line with a 12-inch branch to the compressor, and ten-inch branches to each hoisting engine. Nine feet steel plate for inducement-draught fan. Four new revolving tipples and four sets of screens, partly erected, at new bankhead. One 20 by 20-inch screen-engine and six-inch steam-line.

I have paid 31 visits to this colliery during the year.

Albion Mines—Stellarton.

Three seams are operated at this colliery—the Cage-Pit Seam, the Third-Seam, as it is generally called, and the McGregor Seam. The Cage-Pit seam is worked from the Third-Seam slope by means of tunnels. Drawing pillars is the principal work being done in this seam. The level pillar and the mine-bord pillar are being drawn in what is called the Iron-door level, in the north side. The coal is lowered to the Third-Seam by means of a shaft operated on the balance system—this lift is called No. 4 Lift.

In the south side of No. 5 lift, pillars are also being drawn. In this seam, there is a range of 14 pillars in this section, worked by the back-balance system, in two divisions: one balance operting the top section of from five to six pillars, and the other operating from the lower section, from eight to nine pillars. These pillars are extracted very clean—75 to 80 per cent. being taken out. A horizontal tunnel has been driven, in this lift, from the Cage-Pit Seam to the Ford-Pit Seam, a distance of about 26 feet. A level driven south about 450 feet, proves the seam to be of very good quality. This level is stopped in the meantime, until a second tunnel, which is now being driven, is through, for the purpose of a return airway. When the tunnel is completed, work in this section will be pushed forward as speedily as possible, for development. Little work has been done in sinking this year. The levels in No. 7 lift have reached a distance of about 3000 feet, and are still advancing.

Third Seam.

The work being done in this seam was mostly pillar work. On the north side there are two balances in operation, No. 2 and No. 2 1-2. In No. 2 balance, pillars are being made ready by means of ribbing-in along the upper side of the bords. The bords have all crushed, since they were driven, which causes the ribbing-in to be done. In No. 2 1-2, six pillars are working in the balance, besides the level pillar and the mine-bord pillar. The pillars in this section are very expensive to get out, owing to the yielding nature of the bottom and the bad roof. In the south side of this seam, a long stretch of pillars is being prepared—airways are being opened and levels re-timbered and put in con-

dition for drawing these pillars. This section of pillars is about 3,500 feet in length by 600 feet in breadth. In No. 7 lift, little work has been done, save the driving of two parallel stone drifts from the Third-Seam toward the Cage-Pit seam. These tunnels have reached a distance of about 350 feet or about 100 feet more than the estimated distance. This was caused by a change in the angle of dip. The measures at this point have a dip of about 6 inches in one yard—the usual dip is about 15 inches in one yard. The average quantity of air passing in this mine is 65,000 cubic feet a minute.

McGregor Seam.

This seam has not been in operation since the end of the year 1907. During the first three months of this year, the levels going to the north, were driven a distance of 200 feet. A balance and backhead were driven up from No. 7 lift to No. 6 lift, and the main deeps were advanced a distance of 150 feet. This is all the work that has been done since last year, with the exception of repairs to the pipe-head, and some timbering. About April 6th, indications of fire were found in the top part of No. 6 lift, in No. 3 balance, where pillars had been extracted some time ago. This section had been built off for the same cause, in the months of September and October, 1907. Particular attention had been paid to this, from that time until it again showed indications of fire, on April 16th, 1908, when it was found necessary to build it off again, which was done under great difficulty, owing to the gases given off. After consultation, the management decided to flood the affected district, until it was to be reworked. Dams were put into No. 6 levels, 15 feet in thickness—concrete and stone, reinforced with 60 lb. steel rails and heavy timber. When the dams were completed, a branch pipe-line was taken off the main pipe-line at No. 5 level, and laid along to the top of the affected district which was flooded successfully. The average quantity of air passing in this seam, is 85,000 cubic feet a minute.

The explosive used in this colliery, is Monobel: the quantity used during the last year was 18,125 lb., and 33,901 detonators.

The number of tons of coal raised during the year was 13,953.

The average number of employees underground was:

Miners 110.8
Loaders 47
Shiftmen 112.5
Boys 21

The average number on surface:

Skilled labourers 27.18
Labourers 72
Boys 12

The officials in charge of this colliery are:

John Higson ....Superintendent.
Angus McKay, Cage and Third-Seam. Manager
John Dunbar, McGregor Seam .....Manager
James Brown, Cage & Third Seam ....Underground Manager
Daniel Gillis " " " ....Overman
Alex. Munro " " " ....Night Overman
John Conway " " " .. " "
Henry Mailman, McGregor Seam... " "

The Wolfe safety-lamp, with patent lighter, is used in this colliery. There are 262 in use at the present time and 124 in reserve.

The fan which supplies the McGregor seam with ventilation, is ten feet in diameter and three feet in width. It runs at a speed of 30 revolutions a minute against a water guage of 1 8-10 inch, and produces 85,000 cubic feet of air a minute. This fan was made by Black, Hawthorne & Co., Gateshead-on-Tyne.

The fan which supplies the Slope-Seam and the Cage-Pit Seam, is a Walker fan No. 6654—19 by 5 feet. It runs at a speed of 120 revolutions a minute, and gives an average quantity of 65,000 cubic feet of air a minute. This quantity can be increased. The fan runs against a water gauge of 3 1-2 inches. This colliery is equipped with three pumps; one is placed in the Cage-Pit Seam sinking: this pump is a Jeansville, 7 by 6 by 12 inches, single acting. It delivers at No. 5 level. The water then gravitates to the large pump in the McGrgeor Seam, which is connected with a series of bore-holes.

The McGregor Seam is equipped with a Jeansville pump, triple expansion, outside pack, duplex pump, 19 by 27 by 44 inch steam-cyclinders—plungers four and nine inches diameter, 36 inch stroke—25 strokes a minute, a steam pressure of 90 lb. Its capacity is 1000 gallons a minute against a head of 1600 feet. This pump handles all the water of the Albion-Mines field, the water of the old Ford-Pit, and other old works in the Ford seam.

The Third-Seam is equiped with a duplex Northey-pump—4 1-2 by 2 3-4 by 4 inches. It is placed at the bottom of the sinking in the Third-Seam and delivers at No. 5 level. The water finds its way to the McGregor-Seam pump through the bore-holes.

There have been no improvements on the surface during the last year.

I have paid 32 visits to this colliery during the year.

Acadia Colliery—Westville.

Operations at this colliery have been very steady during the year:

The following compose the official staff:

John K. Blenkinsop .....Superintendent
Samuel Moss .....Manager
Wm. Muirhead .....Underground Manager
Wm. H. Waddin.....Overman
George Burton .....Night Overman
James Chappell..... .....Day Examiner
S. L. Wilson .....Night Examiner

The production of this mine for the last year was 80,883 tons.

The monthly average number of employees underground was:

Miners 116
Loaders 19
Shiftmen 86
Boys 23

The average number on surface:

Skilled labour	30
Labourers	65
Boys	3

Work during the year has been mostly confined to No. 11 lift, north and south. In January, No. 12 lift was unwatered and operations resumed in this section, and has continued uninterrupted since, in the south side. The north side was started and worked for some time; but was discontinued owing to an insufficient supply of air, there being no proper return from this section, on account of water in the mine-bord. In the south side of No. 11 lift, there are five jigs in operation: Nos. 4, 5, 9, 10 and 11—No. 12 jig having been worked out. In No. 11 jig two places are in operation. In No. 10 jig there are four places working, and in No. 9 jig four places in operation. In this section, work was not continued so steadily as in the other parts of the mine—an insufficient quantity of air rendering those places, some times, unfit for work. Airways in this section were difficult to maintain and keep open. A new airway is being driven to the rise of No. 11 level, to connect with this section, and when completed it should greatly assist the ventilation. In No. 4 jig, there are four places in operation, and in No. 5 jig there are three places working.

In No. 11 lift, north side, the levels have not been advanced any since last year, being into the fault. Two chutes have been driven up to No. 10 lift, and are now in operation. The high level and mine-bord in No. 12 lift, south side, have been advanced during the year 550 feet, and are still going on. They are now in a distance of about 2500 feet, in very good coal. Two jigs have also been driven up to No. 11 lift from No. 12. About 225 feet up, a fault was met. It was found impossible to get through it, and an engine was placed on No. 11 level, operations were commenced from above, and a place driven down to the fault. It was found that the fault was about 55 feet of an upthrow. This place makes a good return airway on the south side for No. 12 lift.

The high and low level, on the north side of No. 12, have been advanced abut 200 feet during the year, and are now in a distance of about 1700 feet, in a very fine quality of coal—it looks as if this side of the mine is about to again prove a success, below the fault.

A jig has been driven up toward No. 11 lift for a return airway from this side. When driven about 230 feet it went into a fault, which was proved for about 50 feet, when it had to be discontinued. An engine was placed in No. 11 lift, north side, and sinking started to connect with the jig from below. When down about 50 feet it also met a fault, which cut the coal off, so that this place will have to go through about 100 feet of rock to make a connection.

In my last report I mentioned two levels which were started at No. 6 lift, in the large pillar of coal that was left there; these levels have been driven into the last opening, a distance of about 1350 feet. It was found, at this opening, that all the water from the old Black-Diamond bore-hole that was put through the barrier pillar was finding its way into this opening and running into the lower workings. I am pleased to say that the water has been successfully stopped from running into the lower parts of the mine, and is now being held at No. 6.

Repairs have been made to the traveling-slope during the year. A track is laid in it as far down as No. 8 lift, to where it was enlarged: it has been cleaned from the surface and retimbered down to No. 6 lift: it is now being enlarged and retimbered from No. 8 to No. 6 lift: all the material is taken out by an engine recently placed on the surface. When completed, this traveling-slope will prove a great improvement to the mine.

There are no explosives used in this mine. The name of the lamp used in this mine is the Wolfe, patent-lighter. There are 259 of these in use for the last nine years. The mine is equipped with three pumps—one placed at No. 12 lift, which discharges into dams at No. 10 level; this is a Cameron straight-line single pump, 12 by 13 by 4 inches. The second pump, placed at No. 10 lift, is a Knowles duplex-pump—16 by 16 by 4 inches, which discharges into dam on No. 6 level. Another pump placed at No. 6 lift, is also a Knowles duplex—12 by 22 by 24 inches, with 5 1-2 inch plunger. This pump handles all the water of the mine: it is run by steam and discharges to the surface: the other pumps are run by compresed air.

There are 28,500 cubic feet of air circulating in this mine. There is considerable leakage between the down-cast and upcast airways; the general opinion is that in some parts of the

down-cast, the pillar is crushed and broken between it and the up-cast. The stoppings have all been examined and repaired several times, but the leakage continues. The ventilation of this mine is supplied by a Capell fan, 13 feet 6 inches in diameter, and four feet wide, running at a speed of 220 revolutions against a water guage of 4 1-2 inches. It produces an average quantity of 27,500 cubic feet of air a minute. This fan is driven by a 100 h. p. tandem-engine, 9 by 16 inches, made by the Robb-Armstrong Company, Limited, Amherst.

I have visited this mine 15 times during the last year.

Vale Colliery—Thorburn.

This colliery has worked steadily during the last year, and the underground development has been regularly advanced. No. 6 levels have been advanced about 800 feet where they were stopped, as it was found that No. 6 and 7 levels were drawing close to each other, owing to a swing in the measures. A balance is now being driven up to No. 7 lift to connect with a balance off No. 6 lift. All of these lifts can be worked from No. 7 lift, except a few pillars which are being drawn in No. 2 balance. No. 1 balance pillars have all been taken out. The levels on east side of No. 6 lift have not been advanced very far during the year. Six rooms are working on the slant which was driven down from No. 5 lift. The levels on the east and west side of No. 7 lift have been advanced more than 1000 feet during the year. On the west side, Nos. 1, 2 and 3 balances have been driven, and rooms worked on Nos. 1 and 2. The coal, in this section, of very fine quality, averages four feet in height. On the east side, the coal is of good quality, but stronger and more difficult to shoot. The levels, east and west, in No. 8 lift are being advanced: on the west side the upper and lower levels have both been advanced. The levels on the east side have been driven about 700 feet, and are still going. In this section, between Nos. 7 and 8 levels, longwall has been worked on the east and west sides, both sections having a face of about 600 feet, and gateways turned off the main heading, every 40 feet. Here the coal is delivered by the men and taken down the heading by horses to the main level. This system has proved fairly successful, and I have no doubt that if properly taken hold of by the men, that it will prove a success, and a better quality of coal can be produced at a less cost with less labour.

The sinking of the main slant has been advanced 350 feet, during the last year. The coal in this sinking was found to carry about one foot of splint in the bottom part of the seam; but as it progresses, this splint is disappearing. No. 4 level is worked out, all but four pillars in No. 5 balance, which will soon be finished. No. 4 level, north, which has been standing for the last four or five years, has again been cleaned up to the first balance. This balance is being extended further to the rise, and rooms turned off north and south. There is a large section of pillars in this district, and as the work advances I have no doubt that a large body of good solid coal will be found, besides the pillars.

Total amount of coal raised in this colliery during the last year was 105,297 tons.

The average number of men and boys employed underground was:—

Miners	95
Loaders	67
Shiftmen	47
Boys	33

The average number on the surface was:

Skilled labourers	8
Labourers	62
Boys	1

The amount of explosives used during the year was black powder, 24,672 lb. This explosive was discontinued on February 8th, 1908, when it was found necessary to change this explosive for a safer one. On the above date, Monobel powder, a permitted explosive, made by the Nobel Explosive Company, Glasgow, was substituted for the black powder. I am pleased to say that it has proved a success in every way, as regards safety and quality. The total quantity used since February 8th, 1908, to September 30th, 1908, was 22,315 lb.—the number of detonators, 53,896.

Closed lights are used in this mine and are of various kinds There are 132 Marsaut, 42 Muesler, 44 Derby, and 7 Wolfe lamps.

The company purpose soon to replace these lamps by the Ackroyd-Best lamp, the first consignment of 50 having arrived. The plant for lighting and cleaning has been put in place, and by the end of the present year the Ackroyd-Best will be in general use.

The following is the official staff:

Harry E. Coll ....Superintendent
Robt. H. Gray ....Manager
Harry H. Cameron .....Underground Manager
John H. McNeil .....Overman
Neil McKay ....Back Overman
James D. McKay .....Night Examiner
Lauchlin P. McNeil.....Day Examiner

The average quantity of air circulating in this mine is 32,500 cubic feet a minute. This is produced by a 28 feet diameter, Walker-fan, directly connected to a 24 by 24 inch Walker-engine, running against a three-inch water gauge. The mine is equipped with four pumps one at the 1800-feet level, one in the east-side deep, that discharges into dam at 1800 feet level, one is placed at No. 6 lift in the west-side slant, and one in the slant, No. 8 lift. One pump at west side of No. 7, acting as a relay pump for No. 6 pump. Total quantity of water handled in this section is about 50,000 gallons in 24 hours.

The pump at the 1800-feet level, handles all the water between there and the surface. It is a Knowles compound duplex-pump, 22 3-4 by 7 by 24 inches, steam driven. The pump in the east sinking, is also a Knowles sinking-pump, 18 by 18 inches, discharging to the 1800 feet level through a 3-inch pipe-line 2,000 feet long. The pumps on the west side are, one Cameron 6 by 3 by 9, and one Jeansville 6 by 6 by 10 inches. These pumps discharge into the 1800 feet level dams.

Improvements have been made to the surface and to the power plant during the year. A new compressor has been placed, size of steam end 18 by 24 inches, m. e. p. 45 lb., which develops 100 h. p. The air end is 17 by 42 inches; its capacity of free-air compression is about 495 cubic feet a minute. The 4-inch steam-pipe-line has been replaced by a six inch line with a steam trap and a separator on the new line—also a Wainworth even-flow heater, for feed-water has been placed, capacity 1000 gallons. It

is heated by the exhaust steam from the compressor, through an eight-inch line, 260 feet long, giving boiler feed-water a temperature of about 200 degrees.

A drag chain has been placed on the bankhead to pull the empty trips over the brow of the bank. This saves much time and labour; it is run by a screen engine. Some improvements have been made to the fan, by re-roofing the air-deck and repairing the engine. All the surface buildings are now heated by steam—more than 2000 feet of pipe being used for this purpose.

I have visted this colliery 15 times during the year.

Drummond Colliery—Westville.

Work at this colliery has been fairly steady during the last year, and development work carried forward as speedily as possible.

This colliery is worked in three divisions, all on the same seam.

First District.

The deep on the main slope is called the Main Seam, and is producing coal from a depth of 7,220 feet. This slope has an angle of about 16 1-2 degrees, and 16 boxes are hauled each trip.

Second District.

No. 6 lift, the coal is hoisted in the No. 2 slope; this slope is also used for lowering and hoisting the men of both sections.

Third District.

No. 4 Slope—This slope is being driven and is cutting along the face of the levels that were driven from the No. 2 slope, and which reached the barrier between this company's property and the Simon-Holmes area. This company acquired this area afterward, and worked it extensively from this slope. They recovered a large number of pillars which had been lost by a crush in the workings at No. 2 slope, northward. The coal toward the south of this slope is of very inferior quality; much stone in the coal renders it unworkable.

The following is the official staff:

Malcolm Blue .....Manager
James Floyd .....Superintendent
John McDonald .....Underground Manager, Main Seam
Alex. Sutherland .....Overman, North Side, Main Seam
Robt. Lauchlin .....Overman, south " "
James Henderson .....Back Overman " "
George Wright ..... " " " "
James McNeil .....Overman No. 6 Lift
Norman McLeod ..... " " "
Thos. Stewart .....Night Examiner, No. 6 lift
Donald McNeil .....Underground Manager, No. 4 slope.
Rod. Johnson .....Overman, No. 4 slope
Wm. Gray, Jr .....Back Overman, No. 4 slope
James Smith .....Night Examiner, No. 4 slope

This colliery's total production last year was 315,585 tons.

The average number of men employed was:

Miners 294
Loaders 109
Shiftmen 222
Boys 91

The average number employed on surface was:

Skilled labour 67
Labourers 118
Boys 25

No. 16 level, south, is advanced about 500 feet. The length of this level south of the main slope is about 3,500 feet, where it was stopped owing to poor coal. At the face of this level, about three feet of stone and clay were in the middle of the seam, with layers of stone in the bench-coal, varying from one to six inches. This level went about 500 feet farther south than No. 15 level. No. 7 jig was driven up, and an airway driven back to connect with No. 15 level. No. 8 jig was also driven up, a distance of about 200 feet, when it struck the bad coal. No. 8 jig is still in operation, with four walls working, as also is No. 7 jig with four walls. No. 6 jig is operating with six walls. Nos. 3, 4 and 5

jigs worked down to within 60 feet of the main level. No. 1 and No. 2 jigs are also in operation with six walls on each. An airway has been sunk from this lift to No. 17 lift. An engine placed on the main level of No. 16, hoists the coal. When about 250 feet down, a 20 feet down-throw fault was met, and it was found necessary to start a place up from No. 17 to meet the airway coming down. These have been connected, and make a good air return for the south side of No. 17 lift.

On the north side of No. 16 lift, four jigs are in operation. No. 1 jig has six walls working, No. 2 jig, three walls working, No. 3 jig, three walls working, No. 4 jig, three walls working. An airway from this lift has been driven down part of the way to No. 17 lift; the coal is hauled by an engine. About 180 feet down, a down-throw fault of 20 feet was cut through. When in about 50 feet farther, another fault was met which threw the coal down the full thickness. This airway is now being driven up from No. 17 lift, north, and when completed will make a good return for the north side of No. 17 lift.

On the north side of No. 17, the levels are being driven double shift, and have reached a distance of about 500 feet in good coal; these levels will have a short distance to go, to reach the boundary line between the Intercolonial Coal Company and the Acadia Coal Company.

The sinking of another lift has begun, and has reached a distance of 200 feet. At 160 feet from the mine-bord of No. 17 lift, a ten-foot up-throw fault was met—this is the first up-throw that has been met. It has been cut through successfully, and the sinking continued as speedily as possible—double shift. The formations are regular and the coal good. When this lift is finished, the slope will then have reached a distance of nearly 8000 feet.

Both levels in the south side of No. 17 lift are being pushed forward with all possible speed, and have reached south a distance of about 1250 feet. Jigs are being driven up from No. 17 to No. 16. This lift will be very difficult to work, owing to the large fault in the centre of it, the rotten roof, and the yielding bottom. No. 15 lift has been worked to the balance, close to the airway. The airway is 450 feet from the main slope. This 450 feet is a pillar of coal, left between the main slope and the return airway on both sides of the main slope. This pillar has

been left in No's. 15, 16, and 17 lifts, and has proved a great support to the slope.

In No. 6 lift, a sinking was ribbed down through the old pillars, from No. 6 lift to No. 7 lift, by means of an engine placed on No. 6 level which lands the coal on No. 6 level. This sinking was put down a distance of about 550 feet, and levels turned off. Those levels have been ribbed-in for a distance of 500 feet, and are still going. Two balances have been put up to No. 6, and have opened up a large field of old pillars; there are seven places working in this section. In the north side of No. 6, levels have been ribbed-in to the main slope, to the boundary line of the Acadia Coal Company. Two balances have been put up from No. 6 and No. 5 lifts, and a third balance is now being driven. There are eight pillars and one balance working on this side. A large block of pillars has been gained in this section.

No. 4 slope has now reached No. 9 lift in No. 2 slope, and has been driven during the last year about 600 feet. There are five different lifts working in this slope. No. 5 lift is nearly all worked out—only one pillar left working. In No. 5 1-2 lift, two pillars are working, finishing up the lift. In No. 6 1-2 lift, four pillars are working and a slant is being driven so as to reach some more pillars. In No. 7 lift, three pillars are being worked; these pillars are being extracted very clean, about 85 per cent. of the coal being taken out. There are three levels being driven in No. 8 lift, which are in a distance of 1600 feet toward No. 2 slope. One balance has been driven up to No. 7—a distance of 500 feet—another balance and back-head are driving. This lift opens up a large area of pillars. A level was driven in the south side of No. 7 lift for about 250 feet, and a balance driven up about 100 feet; but both had to be stopped owing to bad coal. A trial was made, during the year, in the Scott-Pit seam. A slope and back-slope was sunk for about 100 feet. A balance and back-head were driven up for about 100 feet, and as the coal did not show any improvement, work was discontinued on April 1st, 1908. Clay was taken from the Third-Seam to be used in brick making up to June 15th, 1908. Repairs have been done on the airways during the year. An engine was placed in the main return, and the airway enlarged. The airways in Nos. 15 and 16 were also enlarged. The maintenance of the airways in this mine is very expensive.

Safety lamps are in use in this colliery. The lamp used is the Marsaut, there being 700 in use, and 100 in reserve. The explosive used is Excellite, a permitted explosive; the total quantity used during the year was 6445 lb., and the number of detonators 1612. The average total quantity of air circulating in the Main Seam is 61,750 cubic feet a minute. In No. 4 slope, the average quantity is 21,670 cubic feet a minute. A Walker fan and engine, made by Walker Bros., Wigan, England, produces the ventilation. The engines are cross-compound, so arranged with steam pipes and valve connections, that they can be used independently. The high pressure cylinders are 17 inches in diameter—the low pressure cylinders 23 by 36 inches. The fan is 20 feet 6 inches in diameter, and is a Walker indestructible fan. It makes 235 revolutions a minute, against a water-gauge of 5 1-2 inches.

The colliery is equipped with seven pumps—five being placed in main seam, one in Scott-Pit seam, and one in No. 6 slope. No. 1 pump in No. 5 lift is a compound Knowles steam-pump—straight line—8 inch, high pressure, 16-inch, low pressure, with 6 inch plungers and a 26 inch stroke. This pump delivers to the surface and pumps all the water of the colliery from No. 5 lift. The other pumps deliver to this pump from No. 4 slope and from the Scott-Pit seam. No. 2 pump is a Northey, straight-line-duplex pump—11 by 4 1-2 by 18 inches. No. 3 is a crank and fly-wheel Knowles—11 by 4 by 18 inches. No. 4 is a straight-line-single Northey—12 by 4 1-2 by 12 inches. No. 5 is a common-straight-line pump 10 by 4 by 12 inches. No. 6 is a straight-line Northey, single—10 by 4 1-2 inches. No. 7 is a duplex Worthington, straight-line—10 by 5 by 12 inches.

There have been few changes made on the surface plant during the last year. Prospecting by trial shaft and by hand-drilling has been done by this company during the last summer, on their areas lying to the south-west of Stellarton, or south of the Asphalt square. They have been searching for any seams overlying the main seam: coal was found in several places; but the quantity has yet to be determined by means of boring to the dip, which the company purpose to do as soon as possible.

I have paid 32 visits to this colliery during the past year.

Marsh Colliery—Coalburn.

This mine has worked steadily during the year, the work being confined mostly to No's. 5 and 6 lifts. No. 6 has been all worked out except one place, which is being finished. This work was nearly all done on the northern side of the basin. No. 5 lift has one balance in operation with 12 rooms working on the west side. On the east side of the slope, the company has secured lease of a strip of 600 feet, which they are working from the bottom, upward, by one balance on which are nine rooms. In No. 4 lift, there are four rooms working around a fault in an area that could not be worked from No. 5 lift. The coal in the levels in this mine is hauled to the bottom of the main slope by tail-rope haulage. The seam is so low that it would not admit horses, unless brushing was done, at a heavy cost. The haulage engines are driven by compressed air.

Explosive used is common black powder No. 3. The total quantity used, during the last year, was 35,524 lb. The total quantity of coal shipped during the year was 35,033 tons. The average number of men employed underground was:

Miners	26
Loaders	28
Shiftmen	5
Boys	6

The average number employed on surface was:

Skilled labourers	11
Labourers	9

The officials in this mine are:

James W. McIntosh	Manager
Michael Muir	Underground Manager
Bruce McDonald	Overman
David McDonald	Night Examiner

The average quantity of air passing is 24,000 cubic feet a minute. The ventilation is produced by a B. E. Sturtevant fan, made in Boston. It is 26 by 6 feet, and runs at a speed of 20 revolutions a minute; this mine is well ventilated. The lamp

used is the open-light Bicket. There are three pumps in this mine—one at No. 3 lift, and the other two are at the bottom, delivering into dams at No. 3 lift. The pump at No. 3 lift is a Cameron—it pumps to the surface. It is 7 by 13 inches, and has a capacity of 200 gallons a minute. One of the other two pumps, is a Cameron, No. 5—5 by 13 inches. The other is a duplex Northey—6 by 7 inches. The combined capacity of these two pumps is 300 gallons a minute, and they are driven by compresed air, but are not in continuous use. The company has been doing some prospecting with a government drill, during the year, on other parts of their area, about half a mile east of the old Coalbrook mine, and is still boring.

I visited this colliery 15 times during the year.

Yours Truly,

THOMAS BLACKWOOD,
Deputy Inspector of Mines.

Pictou District.

Accidents in Pictou Coal Mines, October 1st., 1907, to September 30th., 1908.

No.	Date.	Name of Mine.	Name.	Occupation.	Remarks.
	1907				
1	Oct. 12..	Drummond	J. P. McDonald.	Shiftman....	Killed by a box at bottom of balance.
2	" 19..	"	Samuel Fisher.	Fireman	Arm broken in two places caught by pully belt.
3	" 28..	"	Ernest Little...	Laborer.....	Killed by being smothered by slack coal in a chute of the boiler shed.
4	" 30..	Albion Mines ..	George White..	Miner.....	Fracture of cheek bone. Nasal bone and upper cheek bone by a fall of coal.
5	" 28..	Drummond	William Hale..	Chain Runner	Small bone of his leg broken by rope.
6	Dec. 6...	"	Robert Clarke..	Fireman	Killed at fire doors by a full trip being pulled through the bank head by an over-wind.
7	"12 ..	Albion Mines ..	Hugh Dunbar..	Miner.....	Ribs broken and thigh broken by a fall of coal.
8	"19 ..	Acadia Mines ..	John Sculley...	Miner.....	Small bone broken by rope at the top of the sinking.
	1908				
9	Jan. 2...	Albion Mines ..	John Smith....	Cage Runner.	Thigh burned by his lamp while covered with stone on balance caused by timber being knocked out by cage.
10	" 9...	Drummond	Chas. Laughlin.	Chain Runner	Knee dislocated and small bone broken, being caught by full trip against side of rib. Back injured by fall of roof stone.
11	" 10...	Vale Mine.....	Peter Johnston.	Miner.	Compound fracture of leg and collar bone broken, otherwise injured by fall of coal at face of Pillar.

12	Feb. 15..	Albion Mine...	Frank Green...	Miner.....	Killed by being caught by a box on balance while putting his clothes on for home.
13	" 18..	Drummond	Arnold Cooper.	Loader..	Slightly injured on body by a fall of top stone.
14	Mar. 2..	Marsh Mine....	Chas. Cameron.	Miner.....	Severely injured on head and face by being caught by full trip on level.
15	" 9..	Drummond	Leo Campbell..	Driver	Body injured caught between door post and full trip in sinking.
16	" 12..	Albion Mines ..	Robert Slater..	Shot Firer . .	Leg broken by a piece of coal rolling down head where he was working.
17	Apr. 9 ..	" ..	John McLeod..	Miner.....	Compound fracture of left leg on bank by a falling slide door.
18	" 15..	Albion Mines..	Jas. Bower.....	Laborer.	Slightly injured on body by fall of coal at face.
19	" 23..	Allan Shafts...	James Clark....	Miner.....	Slightly injured about body by a fall of top coal
20	"23 ..	Allan Shafts...	Geo. Kellock...	Miner.....	Slightly injured about body by a fall of top coal
21	" 27..	Drummond	Donald Miller..	Miner.....	Leg broken by being struck by rope on top of balance sheets.
22	May 16..	Allan Shafts...	Fred Strattie...	Driver.....	Slightly injured about body by falling in front of his trip.
23	" 29..	Albion Mines ..	William Oliver.	Shiftman....	Compound fracture of his leg by a fall of coal off rib while loadihg box to put up timber.
24	June 6..	"	William Jones..	Miner.....	Right Leg badly fractured by a piece of coal rolling on him, jamming him against timber
25	" 17..	Drummond	D. McMaster...	Miner.....	Killed by a fall of coal and stones while preparing a place in a pillar.
26	" 20..	" ..	Thomas Barrett.	Miner.....	While on his way home was caught by rope shunting into landing, injured about the body.

Accidents in Pictou Coal Mines, October 1st, 1907, to September 30th, 1908.—(Continued.)

No.	Date.	Name of Mine.	Name.	Occupation.	Remarks.
	1908				
27	July 9...	Albion Mines ..	Geo. Kesveltis..	Cage Runner.	Right thigh broken by cage on the balance leaving the track.
28	" 29..	Albion Mine...	Wm. Eddy.....	Miner.....	Ribs fractured and back injured by a fall of coal off rib while clearing out air-head.
29	Sept. 29.	Acadia Mines ..	Rod McKinnon.	Miner.....	Ribs fractured and otherwise injured by a fall of roof coal and stone at working face.

PORT HAWKESBURY,

DECEMBER, 1, 1908.

HIRAM DONKIN, ESQ.,

Deputy Commissioner of Public Works and Mines,

HALIFAX, N. S.

DEAR SIR:—I beg leave to submit the annual report on the coal mines in the Inverness district, for the year ended September 30. 1908.

INVERNESS MINE.

The following is a report of the development done at Inverness mine for the year ended September 30th., 1908.

Underground.

All the pillar coal has been drawn on No. 4 east, back from the face for a distance of 1600 feet, to within 500 feet of where the angle slope crosses No. 4 level.

No. 5 East:—This level is now in a distance of 5990 feet: distance driven during the year 1430 feet. 1200 feet of pillar coal have been extracted on this level: the pillars being drawn while advancing.

A 35 h. p. tail-rope engine has been installed on this level.

The level will advance 200 feet farther to the boundary line.

No. 6, east level:—Total length 5250 feet: advanced during the year 1894 feet. The coal on this level is hauled by horses. The pillars on No. 5 balance are now being drawn on this level.

No. 6, west level:—Total distance 2510 feet. Has been driven 560 feet during the year. Two local down-throw faults were met. The first fault was struck at a distance of 1920 feet, with a displacement of 30 feet down-throw. The second fault was struck at 2210, with a displacement of 10 feet down-throw. 1400 feet of pillar-coal has been drawn on this level, which is all under-sea. Thickness of cover 650 feet, mostly shale. No water has been met in the drawing of pillars on this level.

A new angle-slope has been driven, beginning at a point 300 feet down from the surface on the present slope and diverging at an angle of 45 degrees east for a distance of 3100 feet to No. 6 level; this slope is now being doubled tracked with 56 lb. rails and is almost completed. The object of this slope is to get farther into the centre of the coal field, equalizing the distance of the levels on each side of the slope and to reduce the gradient.

A rock tunnel has also been driven a distance of 652 feet to win an overlying seam, or what is known as the 13 feet seam. This tunnel begins off No. 6 level 2100 feet from the present slope, and at a point where the new angle-slope strikes No. 6 level. This tunnel is all under-sea, with a cover of 700 feet of solid strata. A three feet seam of excellent coal has been struck in this tunnel. This seam of coal was previously unknown in this coal field. The larger seam is expected to be won in a farther distance of 30 feet.

Two Cameron wood-lined pumps were placed during the year. One at No. 3 level with a capacity of 500 gallons a minute, and one at No. 5 level with a capacity of 250 gallons a minute.

New permanent return air courses have been made on the east and west sides of the mine during the year. Quantity of air in circulation, 110,000 cubic feet a minute with a two-inch water-gauge.

The following is the quantity of loose black powder used:—

Pounds powder used during the year.....	94,920
Tons coal produced during 12 months to Sept. 30th...	283,704
Tons coal produced for each pound of powder used...	2.99

This does not include the powder used in driving the tunnel.

The coal mined in the pillars is of very good quality and the quantity is as follows:—

Total pillar coal 139,780 tons—45,760 tons of which were from under-sea pillars.

Average number of men and boys employed for year ended 30th. September, 1908, were

	UNDERGROUND.		SURFACE.		TOTAL.	
	MEN.	BOYS.	MEN.	BOYS.	MEN.	BOYS
Quarter to 31st. Dec. '07	369	23	92	14	461	37
" 31st. Mar. '08	370	20	98	13	468	33
" 30th. June. '08	467	18	148	17	615	35
" 30th. Sept. '08	471	22	115	16	586	38
Totals.....	1677	83	453	60	2130	143
Average for year...	419	21	113	15	532	36

Number of horses employed 30.

Open lights are used in this mine.

Surface.

One battery of Babcock & Wilcox boilers was put into service. A new machine shop was also erected at this colliery. There are 40 miners' houses under construction, four of which are almost completed.

200 mine-cars have been added to the mine equipment, and 50 new 30-ton railway cars have been purchased during the year. The other equipment is as previously reported.

MABOU & GULF COAL COMPANY, LIMITED.

This mine was in operation until August 8th., 1908.

Average number of men daily employed to Aug., 8th.	86 men.
Main slope driven.....	463 feet.
West Levels driven.....	2018 "
East Levels driven.....	845 "
Powder consumed.....	20834 pounds.

Active mine operations stopped August 8th., 1908.

Government of Nova Scotia took hold of works September 4th. 1908.

Average number of men daily employed to end of month of September, 22.

The Government of Nova Scotia is keeping the mine in a safe condition.

SURFACE BUILDINGS.

One bankhouse	227 x 27¼ feet.
" Ell to bankhouse	68 x 22½"
" Boarding house, 2½ storeys	109 x 26½"
" Office building	20½ x 12½"
" Forge and workshop combined	52½ x 25½"
" Wash-house	25 x 20 "
" Boiler-house	27 x 37 "
" "	21 x 38 "
" "	25 x 50 "
A shed to each boiler-house	16 x 42 "
" Engine house	50 x 27 "
" " (hoisting)	27½ x 32½"
Two double houses, 1½ storeys	40 x 24 "
(with kitchens attached)	13 x9 x 8 "
One single dwelling house	20½ x 15½"
(with ell)	15½ x 12½"
" Barn	24½ x 20½"

Machinery.

Two Matheson boilers, 80 h. p., return-tubular, size 5 by 14 feet, externally fired, water fed by two Penberthey injectors.

Two Cooper boilers, 80 h. p., return tubular, size 5 by 16 feet.

Three Mumford tubular boilers, 100 h. p., each internally fired, water fed by two Penberthey injectors.

One Duplex hoisting engine 20 by 32 inches, with two drums, size of drums, five feet in diameter, directly connected.

One { B. Duplex air compressor steam, 20 by 30 inches.
" air 20 by 30 "

" Air receiver.

Mine fan and engine, size of engine 7 by 10½ inches, diameter of fan 77¼ inches, inlet 60½ inches diameter, outlet 48½ by 48½ inches.

Screening plant, consisting of picking-table, screen, tipple, elevator, and engine.

Two Ingersoll mining machines (punchers)
One Harrison " " "
Three Sullivan " " "
Two Radial " " "
One four-pole electric dynamo, marble switch board.
Two single electric gongs
" pumps No. 9 Cameron
" " 6 "
One " 3 "
" fly-wheel pump
" duplex "

The quantity of air in circulation is 18,000 cubic feet a minute. Open lights are used.

Port Hood Mine.

The output of this mine during the year was 99,700 tons, an increase over that of last year of 23,617 tons. The quantity of powder used to produce this amount was 7,785 pounds bull-dog powder and 27,770 pounds No. 3 black powder, which gave 2.80 tons for each pound of powder used.

There are 152 men and 8 boys employed in this mine. On the surface there are 58.5 men and 4 boys, making a total of 222.5 employed.

There are ninety-six working places in the mine. No. 3 north level was extended 1,900 feet. No. 4 north level 1,465 feet. No. 3 south level 1,025 feet and No. 4 south 625 feet.

There has been a traveling slope started from No. 3 level and was driven a distance of 600 feet during the year, to be driven to surface to be used in lowering and hoisting men.

Safety lamps of the Ackroyd & Best type have been used since the 28th., of July, 1908. There are at present 300 lamps in stock.

The average amount of air in circulation is 50,000 cubic feet a minute.

There has been a gradual change in the angle of pitch in the last 600 feet of No. 3 level north, flattening off from 21 degrees to about 13 degrees.

The slope has been re-tracked and sills laid under the rails from surface to No. 3 landing.

There have been 100 pit-boxes added to the mine equipment during the year. A 100 h. p. tail-rope engine has been put in to convey coal to pier. There has also been a 36 inch Jeffrey Rubber Belt Conveyor installed on pier greatly facilitating the loading of ships. There has also been placed a 25 h. p. upright engine in connection with the slack conveyor. Also an 18 inch Jeffrey rubber-belt conveyor which conveys coal to boilers. There has also been placed during the year one battery of return tubular boilers.

The officials of this mine are:—Manager, H. A. McLeod; Under-ground Manager, A. R. McLellan; Overmen, Edward Doyle and A. W. McLean and Chief Engineer, A. J. Campbell.

Richmond Mine.

During the months of October and November, 1907, some coal was mined for the boilers. A car of this was tested on the Intercolonial Railway and proved highly satisfactory.

In December operations stopped, due to water troubles, but in February, the company started again pumping out the shaft and in March was mining coal. The lower level, 200 feet below the surface, was driven a distance of 608 feet from the foot of the shaft, and six levels above the main level were also worked. 2,500 tons of coal were mined.

September 1st., the work on this seam was stopped as the working faces were approaching the old workings, which were never definitely located.

The average number of men working in this shaft was 15, and 10 men were employed above ground.

Richmond Slope.

The slope, 800 feet west from the old shaft, was started on September 1st. This slope follows the four foot seam which is 160 feet south of the five foot seam of the shaft.

During September this slope was driven 200 feet on an angle of 22 degrees. For a distance of 80 feet, through the surface clay, it is timbered with sets of 8 by 10 inch square timber, four feet

centre to centre and lagged with two inch plank. The opening is 6 by 6 feet inside the timbers. The remainder of the timbering, after the coal was struck, is of hewn material.

Down a distance of 127 feet, a cross-cut is driven up to start the air course and man-way, this will run parallel with the main slope or haulage way. This seam of coal is four feet thick, of excellent quality, and stands vertical. It is the intention to mine this seam by the longwall system, if conditions permit.

It is the purpose of the company to follow this vertical seam to find where it blankets, and in the meantime to drive off levels.

The work is carried on night and day, about 11 men being employed underground. Open lights are used.

No pumps are in use inside as no water has, as yet, been met.

Outside Improvements.

A frame power-house 17 ft., by 49 ft., was built and the machinery used is a 25 h. p. upright boiler and a Florey hoisting engine with 8 by 10 inch cylinders.

Ventilation is furnished by a sheldon fan of 1800 cubic feet, run by a small steam engine of 4 h. p.

A wooden trestle, 600 feet long, was built across the Little River, to the railroad tracks, where the coal will be loaded on cars.

The company started to ship coal the last of September.

An average of 10 men are employed above ground.

The company has one Robb-Mumford boiler of 150 h. p., one small upright boiler of 20 h. p., two Florey hoisting engines, five sinking pumps, one Allis-Chalmers-Bullock compressor and receiver, besides the machinery now in use.

Dwellings.

In the vicinity of the operation the company has built five single houses for miners, one large boarding house to accomodate about 35 men, and one large dwelling.

The above buildings together with the power house, blacksmith shop, store-house and stables, make a total of 13 buildings.

100 tons of coal have been taken from the slope.

Yours respectfully,

W. F. DAVIS,

Deputy Inspector of Mines.

Date	Name of Mine.	Name of Person Injured.	Occupation.	Remarks.
1907				
Oct. 14..	Inverness	Frank Dewels..	Trapper.....	Leg fractured. Slipped and fell under box.
1908				
Feb. 7...	Port Hood.....	Wm. McKenzie	Miner.....	Killed by an explosion on No. 3 level south.
" 7...	"	Lauchlin Gillis.	"	" " " " "
" 7...	"	John Campbell.	"	" " " " "
" 7...	"	Malcolm Beaton	"	" " " " "
" 7...	"	D. R. McDonald	"	" " " " "
" 7...	"	A. R. McDonald	"	" " " " "
" 7...	"	Bulg.(unknown)	"	" " " " "
" 7...	"	" "	"	" " " " "
" 7...	"	" "	"	" " " " "
" 7...	"	" "	"	" " " " "
" 24 ..	Inverness Mines	Dan A. Gillis..	"	Killed by fall of coal and rock in pillars.
" 25 ..	" "	Tom Maloney..	Chain runner.	Back and breast injured, run over by water box.
Mch. 11.	" "	Alp. Destobel ..	Trapper.....	Leg squeezed and internal injuries, struck by box in angle slope.
Apr. 29..	" "	Allan McIsaac..	Road cleaner.	Legs and side squeezed, struck by rake No. 4 landing.
May 20..	" "	Achile Fleusy..	Miner.....	Leg fractured above knee by fall of rock in pillar.
" 22..	" "	Ben McDonald.	"	Leg fractured above knee fall coal in pillars.
" 30..	" "	Dan Fraser	"	Leg broken at ankle and bruised about body, struck by trip boxes hauled by tail-rope engine.

Accident Report from October 1st, 1907, to September 30th, 1908.—(Continued).

Date.	Name of Mine.	Name of Person Injured.	Occupation.	Remarks.
July 14..	Port Hood.....	Dan McDonald.	Laborer	Slightly hurt by being jammed between boxes.
" 16..	Inverness Mine.	Jules Battriaux.	Miner.....	Right leg fractured about ankle, amputated. Fall coal and rock in pillars.
Aug. 21..	" "	D. A. McLean .	Loader.....	Killed by fall stone from roof in tunnel to 13 feet seam.
Sept. 5..	" "	Harry Jones ...	Shiftman....	Killed by fall stone and coal No. 7 balance, No. 5 east level.
" 22..	" "	S. McPherson..	Picker at belts	Right leg broken above knee by falling off box car at night.

DOMINION, C. B.,

February 26th, 1908.

HON. CHRISTOPHER CHISHOLM,
Commissioner of Public Works and Mines,
Halifax, N. S.

Dear Sir,—Having received authority through Attorney-General W. T. Pipes, we went to Port Hood on Monday, Feb 10th, or three days after the explosion. In company with Deputy Inspector Nicholson and Manager McLennan, we entered the mine on the following morning, going down the main slope to No. 3 landing. After travelling No. 3 level north to the face, we returned and went into No. 4 slant, passing No. 3 balance on No. 3 level, south. The mine is well aired and well timbered, the levels being clean and in good condition.

On our way into No. 3 level, we noticed a thin skim of ice at the landing where the ventilation was in full play. The face of No. 3 level is said to be 1800 feet from the main slope. On passing through the level door we were met by unmistakable evidence of a gas or coal-dust explosion. A heavy smell filled the level from the door to the face, and to those of us who have had experience in mine exlosions, there was no doubt as to what had taken place, although there was nothing in the appearance of that part of the level to indicate an explosion.

Nearing No. 3 slant, however, we noticed debris scattered over the road-way, and were informed by the manager, that for some distance outside of No. 3 slant, the road had been cleaned up to permit of the easy running of a tram, which conveyed the dead bodies to the bottom and to take back material to restore the ventilation. Beween No. 3 slant and No. 3 balance we passed over two small falls of roof-rock, and noted that nearly all the timber and material which had been lying alongside of the level had been moved out of position and tossed about in all shapes, most of it close to the low side of the rib.

All the stoppings but one between No. 4 slant and No. 3 slant had been blown out, but were replaced by brattice. On

reaching No. 3 back balance, we went up to the face, a distance of 150 feet and made a close examination of everything there. At the foot of the back balance numbers of hand picks were strewn around, and farther up parts of stemming gear were seen lying in the middle of the place. Passing through the upper cros-cut we went down the balance. There was no sign of disturbances in these places, except on the bottom at the level, even the sight strings were not burnt. Going in towards No. 4 slant, we passed the place where the five men on the high level were found dead.

The position of the bodies as they were found was explained to us by the manager. Inside of No. 3 balance stood an empty box on the track, while tools, timber and other materials were strewn promiscuously around. No. 4 slant is 28 feet from the face of the upper and 46 feet from the face of the lower level. The bottom of the slant was filled up within three feet of the roof, with coal and other material, tools such as shovels and picks being partly buried. Some of the picks were fastened by the rope with which the miner generally carries his dinner cans and powder cans, showing that these men were only going in to work, and were just on the way there when the explosion occurred, as five of the bodies were picked up at this spot.

Inside of the slant towards the face of the lower level, two booms were down, having been blown down by the force of the explosion. The bottom of the lower level, at the foot of the slant, was considerably torn and disturbed. Leaving the south side we again entered No. 3 north level, and travelled the inside balance, making an examination of the bords. These we found in very good condition, the roof well timbered, free ventilation and no gas.

Not being satisfied with the thoroughness of the investigation of the first day, we requested the manager to go into the mine with us on the following morning, which he did. We went into No. 3 balance, south, carefully noting things as we proceeded. Nearing the back head, boots were found which had been blown out towards the slope, a distance of forty feet. A full can of powder was found on the high side, the can seeming to be in fair condition, and but little injured by the explosion. A miners jumper, and a vest with a watch in the pocket was also picked up. The watch had stopped at 8.45. To ascertain whether it had been stopped by the sudden concussion of the ex-

plosion, we wound it up, giving twenty half turns of the stem. From his we gathered but little information as to the exact time the explosion had occurred, for it was evident the watch had run down. It was undamaged, as it started to go as soon as wound up. We again examined No. 3 backhead and balance, went into the faces of the upper and lower level, turned and traveled out the lower level, to No. 3 slant. This level was in a much better condition than the upper level, being free from falls of rock, although debris was scattered along it out to the slant. So far as we could gather from the condition of the mine, the explosion was not a violent one.

The nature of the explosion is undoubtedly one of gas. It occurred in the back head and balance from which it scattered in all directions, the most of its force having been exerted along the upper level for a distance of 400 feet, and in No. 4 slant extending out the lower level a distance of 400 feet. The reason for our conclusions are:—

1st.—That the heavy smell in that section of the mine is that usually caused by an explosion of gas or gas and coal-dust combined.

2nd.—That the dust of the mine is too heavy to be suspended in the air, (and if there were sufficient quantity of it as there is not) by the concussion of a blown-out shot, or a heavy shock. Evidence is wanting that a shot was fired at all.

3rd.—That no cokeing substance was found on the props or roadways, as is usually found after coal dust explosions.

4th.—That there was no other element present to cause such an explosion as occurred there.

5th.—There is evidence showing that gas in quantity had been found in the balance.

That it occurred in the back-head and balance seems more plausible and reasonable than to say it occurred in the lower level; because if any door was left open by which the air could

take a short circuit, it was No. 3 slant door. If this door had been left open, naturally the air would be cut off from the levels and the balances together. As gas gathers at the highest point, we must conclude that if there was gas in the levels, there was gas in the balance and in the back-head. If all four places—the upper and lower levels, the balance and the back-head, were full of gas, or even contained large quantities of gas, and the gas set off in the lower levels it would certainly have reached the other three places, causing a tremendous explosion.

But as the effect of the explosion does not point to great violence, this theory must be discarded. It is more reasonable, however, to suppose that gas could have gathered in the balance and back-head, owing to the knocking down of the brattice on the level between these places, and that this gas was the cause of explosion, the quantity being much less than from the four places combined. Evidence was given that this brattice was down between the back-head and balance and no examination had been made the night previous to the explosion.

As to how the explosion occurred, whether set off by a naked light, fired by powder from a can, or by a shot, no one will ever be able to tell, as all in that section of the mine were killed.

In presenting this report, we thank the Department for extending the authority which enabled us to fully invesigate the cause of the explosion, and obtain information which may lead to a prevention of similar disasters in the future.

Respectfully Yours,

JOHN MOFFATT.
THOMAS SCULLY.
JOSEPH B. MOSS.

COUNTY OF INVERNESS.
TO WIT,

An Inquisition, indented, taken at the Coal Mines, Port Hood, County of Inverness aforesaid, the seventh day of February, in the year of Our Lord one thousand nine hundred and

eight, before me, John Cameron, M. D., one of the coroners of His Majesty the King, in the County aforesaid, upon view of the bodies.

1. Duncan R. McDonald.
2. Malcolm Beaton.
3. John A. Campbell.
4. Allan R. McDonald.
5. William MacKenzie.
6. Lachlan Gillis.
7. Powelle, Bulgarian.
8. Ladime, "
9. Lamby, "
10. Lamby, "

Then and there lying dead, upon the oaths of Harry Craig, John McNeil, John R. MacDonald, Alex'r. Gillis, John Watts, A. C. McEachren, John D. McIsaac, A. D. McIsaac, Angus H. Gillis, James McDonald, E. Leadbetter and A. R. McDougall, good and lawful men of said County, who, being sworn and charged to enquire on the part of His Maesty the King, when, where and how and after what manner they came to their deaths; that after examining several witnesses, and after several adjournments, find that the above came to death on the morning of the seventh day of February, A. D. 1908, at or about the hour of 7 o'clock, near the southern end of the upper and lower levels of No. 3 lift, south, in the Port Hood coal mine, by an explosion of some explosive mixture.

In witness whereof, the said coroner and the jurors aforesaid, have hereuno set and subscribed their hands and seals, this fiftienth day of February, in the year of Our Lord one thousand nine hundred and eight.

John Cameron, Coroner, (L.S.)
John R. McDonald, foreman, (L.S.)
Angus R. McDougall, (L.S.)
John McNeil, (L.S.)
A. C. McEachren, (L.S.)
Eben Oscar Leadbetter, (L.S.)
Archibald D. McIsaac, (L.S.)
Harry M. Craig, (L.S.)
Alexander Gillis, (L.S.)
John D. McIsaac, (L.S.)
John Watts, (L.S.)
James R. Macdonald, (L.S.)

PORT HOOD, April 24th, 1908.

To The Hon. The Commisioner of Public Works and Mines:

Halifax, N. S.

The Commission appointed under Section 44 A, Chapter 35, of the "Coal Mines' Regulation Act," in accordance with your instructions, beg leave to make the following recommendations with regard to explosives to be used in "Port Hood Mine":

We unanimously recommend that no explosive, other than a compressed permitted explosive, shall be taken into or be used in the mine, and that no shots shall be fired, except by a person holding a certificate as Shotfirer under the "Coal Mines' Regulation Act"; also we would recommend that all shots be tamped with clay; and under no conditions must coal dust or other inflammable material be used for the purpose.

(Sgd,) P. CHRISTIANSON.
(Sgd), W. F. DAVIS,
(Sgd,) DANIEL A. McISAAC.

PORT HOOD, April 24th, 1908.

To The Hon. The Commissioner of Public Works and Mines:

Halifax., N. S.

The undersigned commission appointed under Section 44 A, Chapter 35, of the "Coal Mines' Regulation Act" to examine and recommend if any lamp or light, other than a locked safety lamp, shall be allowed or used in Port Hood mine, beg leave to submit the following report:

The management afforded us every facility for examination of the mine and inquiring into the conditions generally, and after inspecting the workings of the mine on two consecutive days, we found conditions to be good, the ventilation was kept well up to the faces of the workings, by new brattice, which had recently been put up; but we unanimously recommend that no other light than a locked safety lamp, of some approved type, be allowed or used in this mine for the following reasons:

On inspecting the Mine Examiners' Report Book, which is dated Feb. 12th, '08, on the first page, we find that gas was found 65 (sixty-five) times, by the Mine Examiners, on various days, from Feb. 12th up to April 23rd, which was the last day of our inspection; this shows conclusively that the mine is giving off gas in sufficient quantities to become dangerous under certain conditions.

We find that no brick or stone stoppings are built in this mine; all stoppings are built of wood, and in some cases only a stopping of brattice cloth separates intake and return air, at inner crosscuts in levels and balances; also, wooden doors across the levels separate intakes and returns in balances and backheads; all such lightly constructed stoppings and doors are liable to be torn down, by falls of roof, or left open by carelessness or negligence on the part of some employee, and in such case the inner end of the levels or the tops of the balances would soon fill with gas, and someone with a naked light may inadvertently go into such body of gas with very disastrous results.

The mine is continually getting deeper, hence liability to greater quantities of gas being given off in the workings, and we were told, by the management, that the intention is to draw pillars in the near future, and if this is so, a still greater liability to have accumulations of gas over the falls in the pillar workings, is sure to come; hence, safety lamps should be in use before pillar drawing commences, as a fresh fall may at any time force such accumulation of gas out into the workings.

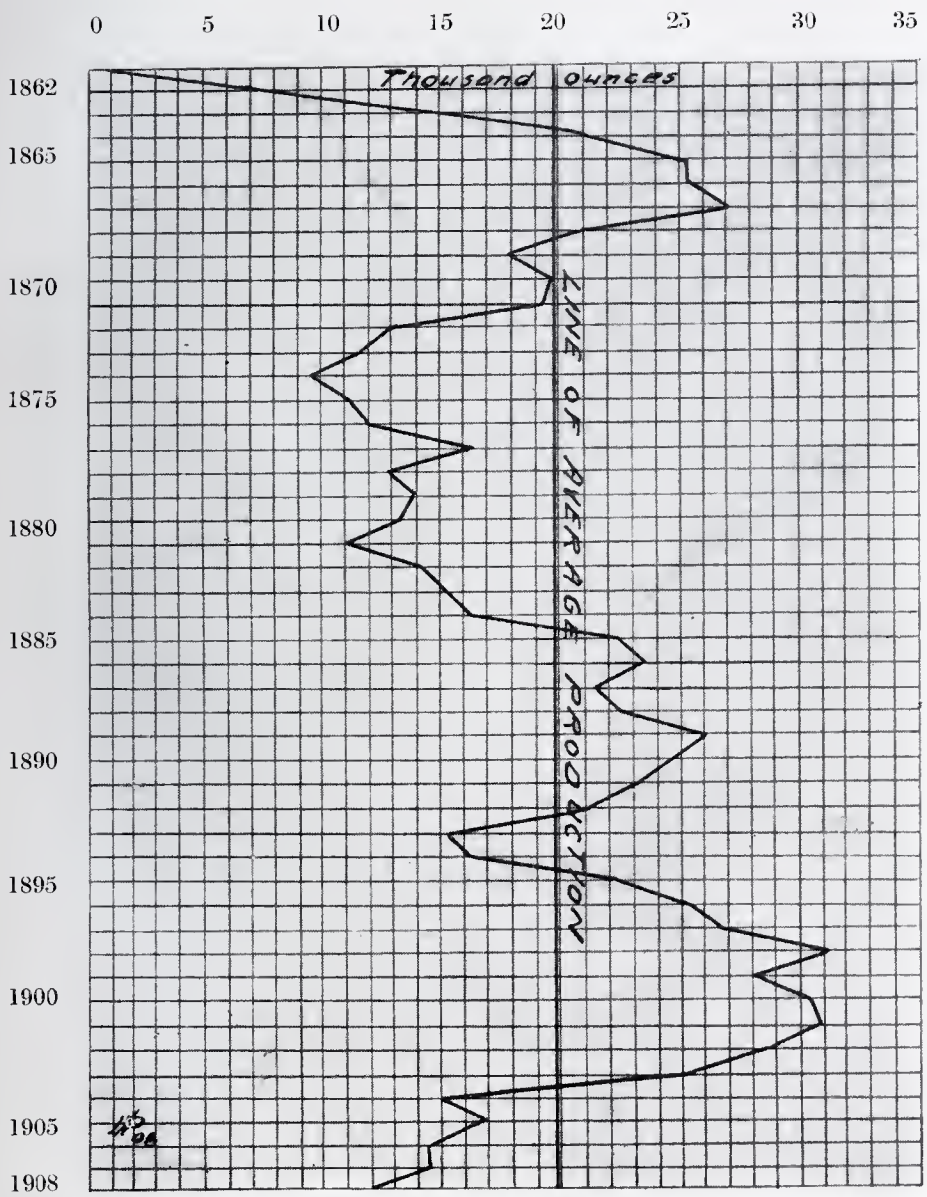
The open lights now in use in this mine are very liable to set fire to dry canvas-doors or dry wood, through carelessness; in fact we saw a boy (who had the lamp in his cap) standing up against a boom of which the dry bark had become ignited from the flame of his lamp; with safety lamps in use an excellent protection against serious and dangerous underground fires is at once apparent.

(Sgd,) P. CHRISTIANSON.

(Sgd,) W. F. DAVIS,

(Sgd,) DANIEL A. McISAAC.

Yearly Yield of Gold 1862 to 1908.



Gold & Minerals other than Coal.

The production of gold during the last year was 11,990 ounces —3,016 ounces fewer than the previous year. 35,075 tons of iron and 1,200 tons of copper ore were mined.

The following report by Mr. H. B. Pickings of the departmental staff, tells the extent to which minerals, other than coal, were mined throughout the Province.

He also refers to an important discovery of tungsten at Moose River in Halifax County.

Half-tone cuts of important, subjects relating to mining will be found interesting.

The profile cut, on the opposite page, shows the yield of gold from 1862 to 1908 inclusive.

A most important discovery of tungsten in the form of schetite was made at Moose River gold district, early in the summer: refeence will be found to this in another page of this report. Although the gold production for the last year, has been somewhat unsatisfactory, indications, at the end of the year, point to greater activity and increased production during the year 1908-09.

GUYSBORO COUNTY.

Isaac's Harbour.

(GOLDBORO.)

BOSTON RICHARDSON MINING COMPANY

Francklyn Playter.....General Manager.
H. S. Badger .....Superintendent.
E. Percy Brown.....Surveyor & Assayer.
John Warner.....Foreman.

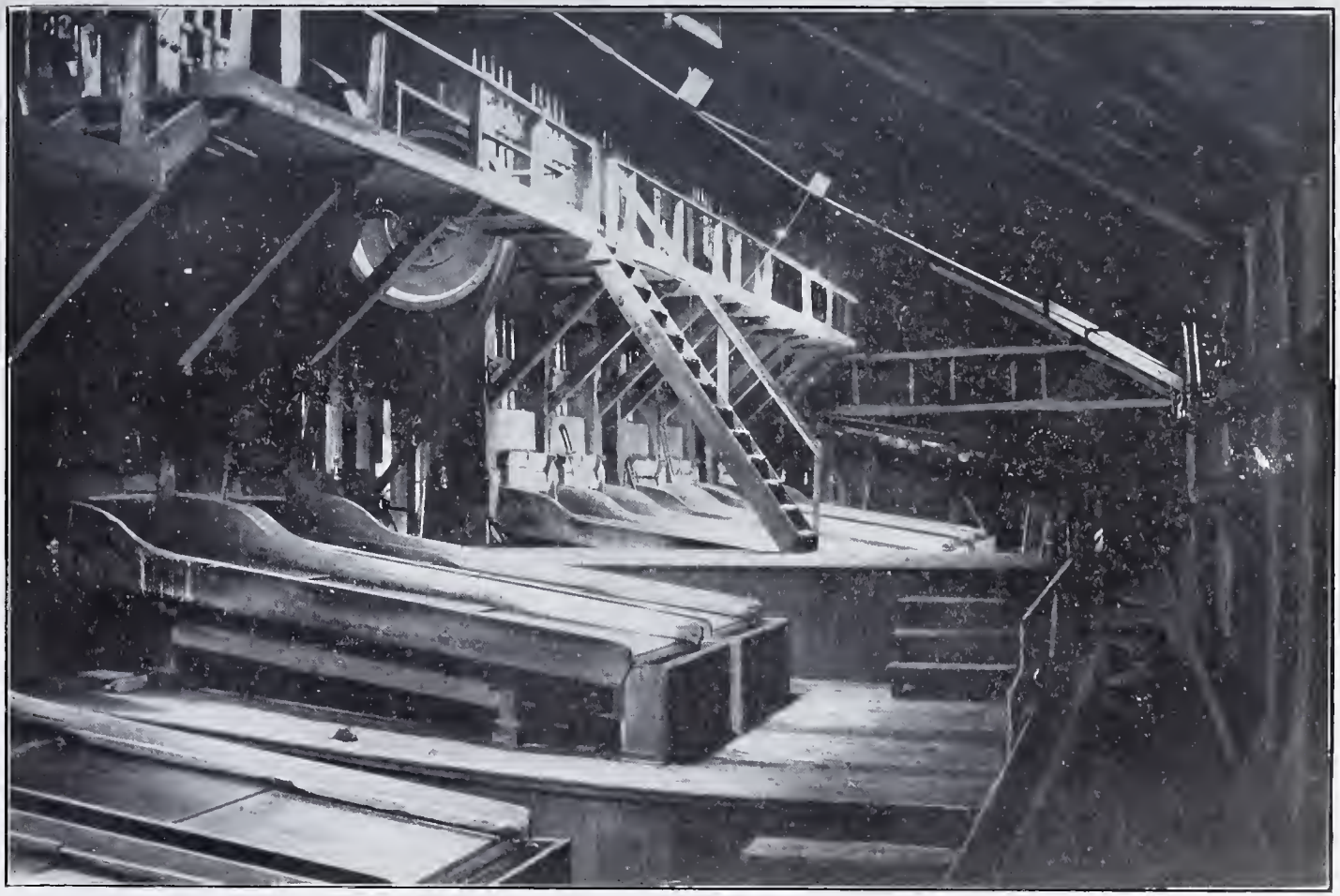
Average number of men employed 105, in two ten hour shifts.

Production.—During the year ended September 30th, 38,000 tons of ore were crushed, yielding 4,092 ounces of gold by stamp amalgamation and cyinide process, making a total average recovery of 89 p.c., 76 p.c. by amalgamation, and 13 p.c. by cyinide; the latter being 70 p.c., of the value contained in the concentrate. This is a decrease of 4,850 tons crushed and 2,412 ounces gold as compared with the last year.

This decrease may be explained by the fact that during the year 1906-07 while carrying on development work, there was a large quantity of reserve ore in the slopes, above the 400 feet level from which the mill was supplied, and the greater part of the ore, from the incline shaft and commencement of the 550 ft. levels, which contained very low values was not crushed; while this year the reserve was not sufficient to supply the mill, and much of the development stuff had to be sent to the crusher.

Underground.—Work was resumed on the incline shaft and this is now 700 feet deep, measured on the slope from the 400 feet station; the 550 feet level, south, has been driven 495 feet and is in 730 feet, and north 820 feet and is now in 1085 feet, the 700 feet level was started south and is now in 181 feet; the north level from the 700 feet station has not yet been started.

Boston Richardson Mining Company.



Interior Boston Richardson Company's 60 Stamp Mill, Goldboro.

Stoping has been carried on from both legs of the 550 feet level, principally on the south side; on the north side the stopes are only now entering what has been termed the main pay-shoot on this leg. On the north side, 170 feet from the station, a raise has been driven on the vein to the incline shaft and 1200 feet from the station a raise is now being driven to the 400 feet level; on the south side, 275 feet from the station, a raise has been driven to connect with the incline.

The ore on what is termed the south pay-shoot on No. 2 level, so far as crushing and tests have been made, would indicate higher values than from the corresponding workings on No 1 level; on the north-side the ore-shoot has not yet been stoped, but only partially passed through by the drift, west. The only test taken so far from the ore-shoot on this side, was from the raise now being driven, and gave high values.

The heavily mineralized ore in this shoot, was met sooner and extends farther on this level than it did on No. 1.

From work so far done and the tests and assays made, there is every indication that the ore-shoots are not only persistent as depth is attained but increase in size and values.

The level south from the 700 feet station is now in 181 feet and is being rapidly driven. It is not the intention at the present time to start a north drift on this level.

The reserve ore broken and remaining in the stopes, on Sept., 30th, was estimated to be 16,253 tons.

Arsenic.—During the year 1907, 323 tons of arsenical concentrate was shipped to Belgium, containing an average product of 40 p. c. metalic arsenic, and during the last year, 595 tons were shipped. Nearly all of this concentrate has been taken from the old accumulation; the tailing is pumped through a concentrating building situated west of the mill, where it is re-concentrated, the mineral constitutent product being about 3 p. c. and containing an average of 39 p. c. metallic arsenic. Shipments during the year have been made to France and Wales. The prices received are dependent upon the market price of pure white arsenic, and have been during the year 1908, in the vicinity of 55c. a unite. These concentrates also carry from $8.00 to $9.00 in gold values, which is not at the present time being paid for by the buyers.

East Block.—The shaft is down 150 feet and three belts have been determined and explored by drifts, eastward around the apex of

the fold. Some rich ore was found in one of these belts. Since the property was taken charge of by the receiver, no work has been carried on.

Surface.—Other than small repair work, no changes have been made to the surface equipment.

Owing to financial difficulties the mine was closed down on August 15th, resuming operations again after a short delay. At the end of the year all departments were working full time.

Lower Seal Harbour.

BEAVER HAT GOLD MINING COMPANY	S. C. McLean	Manager.
	James McQuarrie	Foreman.

Twenty men were employed here up to latter part of May, when the mine was closed.

Production.—2670 tons of Quartz crushed yielded 624 ounces of gold; this is a decrease of 11 ounces compared with the yield of 1907, and represents a recovery of $4.44 from each ton crushed; this is considerably less than the yield per ton for 1907.

Underground.—The 50 feet level was extended east about 50 feet and stoping was carried on between this and the 80 feet level.

Forrest Hill.

MACDONALD AND COPELAND	J. C. McDonald	Manager.
	J. C. Mason	Foreman.

An average of 50 men were employed during the year.

Production.—From 524 tons of ore mined and crushed 1,119 ounces of gold were recovered, being an increase of 744 ounces over the production of 1907.

Underground.—On the hard-lead, the east shaft was sunk to a depth of 116 feet, and levels driven at the bottom, east 240 feet, and west about 160 feet to connect with the old workings from the west shaft. The ore sent to the crusher was principally from the stopes above the west level, only a small portion coming from the east stopes.

School House lead, McDonald and Copeland, Forest Hill.

Lake Catcha.

From 106 tons crushed, 219 ounces of gold were recovered. This was from the J. H. Anderson and F. W. Hanright properties; the work being done by tributors.

In July, work was commenced by the Oxford Mining Company on the Coleman-lead shaft No. 10, preparatory to commencing extensive mining operations.

Caribou.

L. W. Getchell ....Manager.

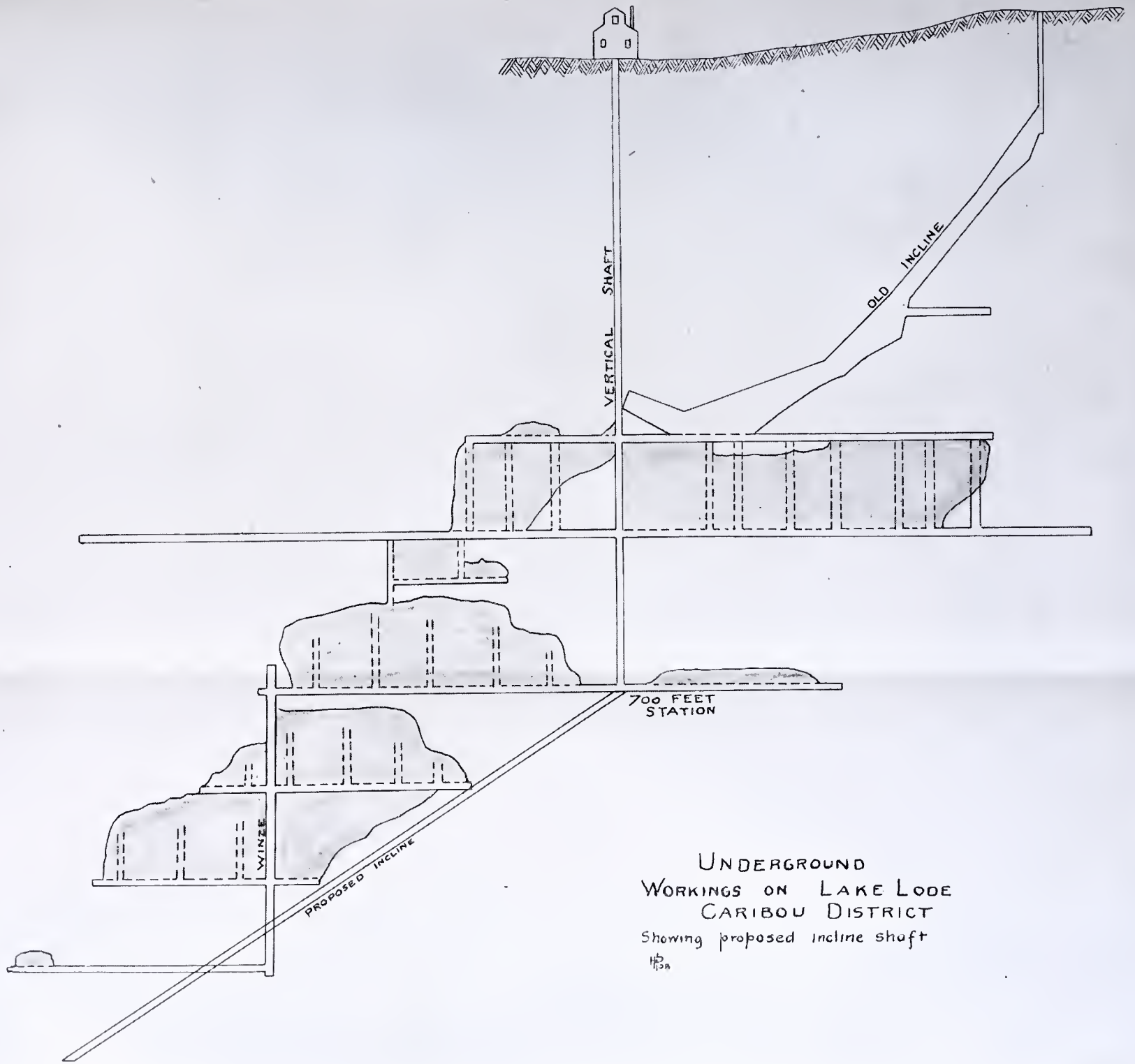
CARIBOU GOLD MINES. S. C. Thomas, Angus McDonald, George Fraser, } .....Foremen.

Production.—1,240 tons of quartz crushed yielded 132 ounces of gold.

The properties in this district formerly owned by the Baltimore-Nova-Scotia Mining Company, and the Nova Scotia & Mexican Mining Company, together with the plant of both properties, were purchased by Mrs. M. R. Holman and consolidated by her, under the name of The Caribou Gold Mines. Extensive prospecting and development work was commenced at the Dickson, Truro, Flat-Leads, Lake, and Holman shaft, so called.

Dickson.—In March, work was commenced in the 100 feet level west; 133 feet were driven along the vein and a cross-cut driven south, 119 feet, 50 feet west of the shaft. On the 200 feet-level west, a cross cut was driven south, 33 feet from the shaft; work was discontinued in July and had not been resumed up to the end of the year.

Truro.—6 men were employed here above, and 30 men below ground. The main Truro shaft was unwatered in March to the 130 feet level, the level was retimbered and continued west 270 feet, making its total length west to the shaft 500 feet. About 450 feet west of the shaft, a break was met throwing the lead about 10 feet to the north. A small amount of ore was stoped out between this level and the surface.



UNDERGROUND
WORKINGS ON LAKE LODE
CARIBOU DISTRICT
Showing proposed incline shaft

Face of West stope above 135 feet level, immediately west of fault, Truro Mine, Caribou.

Extensive repairs were made to the shaft house; a new room for compressor and hoist added, and new ore bins built at the shaft head. A new Jenckes hoist and a compressor, from the Lake equipment, were placed and are now in use. A pump was added to the equipment underground.

Holman.—In July, work was commenced on the sinking of a vertical shaft located just north of the old workings on the Flat leads (so-called) and on the west pitch of the anticlinal fold. The shaft measures 5 by 14 feet inside of timbers. It has three compartments—two winding compartments and a ladder-way, and is timbered at the collar with 10 by 10 inch timbers, and below, 8 by 8 inch timbers. The lagging is 6 inch spruce poles. At the end of the year the depth reached was 70 feet. Nine leads had been cut ranging from 2 inches to 10 inches in width, all containing arsenical pyrite, and seven containing free gold.

A boiler-and-engine house has been built, and a shaft-house is under construction. Ten men have been employed in this work, 6 below and 4 above ground.

Flat-Leads.—The 40 feet shaft sunk, a number of years ago on these leads was unwatered in September and is being cleaned out and retimbered for the purpose of exploring the old workings and driving a cross-cut north to the leads cut in the Holman shaft. A small shaft-house has been built here.

Lakelode.—This shaft has been kept unwatered and work is about to be commenced on the sinking of an incline shaft, from the station at the 700 feet level, to follow along the lower limits of the pay-shoot on this load, as shown on the plan of the underground workings on another page of this report.

The following machinery has been added to the equipment of the mine:—

1 12 H. P. Jenckes hoist——1 10 H. P. Jenckes hoist.
1 Cameron sinking-pump No. 5——1 small Fairbanks pump (duplex.)
2 Murphy Drills No. 3——5 Rand-drills No. 42.
1 Sullivan drill No. 2.

Moose River.

CONSOLIDATED MINES CO. OF CANADA, LIMTIED.

W. C. Guilford.....Manager.
W. S. Curry.....Asst. "
Harvey Higgins.....Foreman

Average number of men employed, 55.

Production.—From 8326 tons of quartz and slate crushed, 844 ounces of gold were recovered, being an increase of 629 ounces of gold recovered and 5431 tons crushed, compared with the results of 1907.

Underground.—Mining operations have been carried on at the Mahar Belt, West shaft, (so-called) East shaft or Cameron (so-called) and Root-Hog lead.

Mahar Belt.—The 225 feet levels on the Mahar belt, Minnie Miller and McCallum leads have been extended as follows:—Mahar belt east 75 feet west 64 feet, Minnie Miller east 164 feet, west 75 feet, McCallum, east 98 feet, west 95 feet. Stoping was carried on on the Minnie-Miller and McCallum leads. In drifting east on the Minnie-Miller lead, a fault was met about 250 feet from the cross-cut, apparently throwing the lead to the south. No effort has yet been made to locate the lead east of the fault. From the 225 feet level, 30 feet west of the shaft, a cross-cut was driven south, cutting several leads. Work on the levels and stopes was discontinued early in the summer and sinking started in the shaft. At the end of the year, this was 325 feet deep, the total sinking during the year being 85 feet.

A six-drill style B. Rand compressor has been set up in the shaft-house and air drills are now being used.

West Shaft.—These workings lie to the west of the Touquoy property, and adjoining what is known as the Johnston areas, on which a very promising lead was cut in 1907. The west shaft was put down for the purpose of cutting the lead. The depth of the shaft is 60 feet. It was full of water at the time of my visit. I understand that the lead had not been cut, up to the end of the year. Surface prospecting has been done on this property and on the adjoining Johnstone property.

Root-Hog.—About 100 feet south of the crusher, on what is known as the Root-Hog lead, a shaft is now being sunk; its present depth being 112 feet.

Shaft House, Oldham Sterling Gold Company, Oldham.

Cameron or East Shaft.—A short distance north of the Moose-River crusher, a shaft has been sunk on what has been named The Cameron Lead. This lead is about 18 inches wide, and carries considerable arsno-pyrite. It dips south, about 59 degrees; its direction is north 70 degrees east. The shaft was put down to a depth of 100 feet and a level driven west 30 feet at the bottom, 10 feet west of the shaft, a cross-cut was driven from this level north 28 feet.

Surface.—Shaft houses were built at the Cameron, Root-Hog, and West Shaft, and the following machinery added to the equipment of the property, one 6 drill Rand compressor, one 100 h. p. Rob boiler, two small Jenckes air-hoists, 4 No. 42 Rand drills, and one Wilfly concentrating table.

Robert Kaulbach.—This property was in operation about three months of the year, producing only 31 ounces of gold. I understand that the property is about to change hands, and again be put into operation.

Oldham.

OLDHAM STERLING GOLD COMPANY

Victor Bernan.....Manager.
Edwin Whidden.....Superintendent.
Harry McDonald } .....Foremen.
Robert Morrison }

An average of 40 men have been employed during the year.

Production.—From 526 tons of quartz crushed 2,384 ounces of gold were recovered, representing an average recovery of 4.53 ounces to the ton. The production for 1907 was 853 ounces from 362 tons of quartz, being a yield of 2.36 ounces to the ton. The production for the last year being 1,530 ounces greater than in 1907, and the yield to the ton, 2.17 ounces greater than in that year.

Underground.—During the year the shaft was sunk 230 feet, making its total depth, measured on the incline, 1330 feet, the vertical depth being 725 feet. The dip of the lead at the bottom is 41 degrees; the average dip is 35 degrees 30 minutes. The lead appears to be increasing in size, averaging at the bottom about 4 inches. Stoping by the underhand method has been carried on for a distance of about 75 feet on both sides of the shaft for the total depth sunk. A number of small faults occured in the lower workings; but too small to interfere with mining operations.

Blue Lead.—A prospect shaft was put down on this lead to a depth of 54 feet.

Shaffer Barrel-Lead.—An old shaft 70 feet deep sunk 25 years ago is being pumped out and retimbered. It is proposed to carry on extensive prospecting work.

Surface.—Crushing was resumed in the Company's mill in June. This is a 10-stamp mill driven by steam. The equipment includes one 8 by 10 Blake rock-breaker, challenge feeders; 1 Wilfly concentrating-table; one 60 H. P. boiler and one, 35 H. P. engine.

The only new additions to the plant during the year were one, 100 H. P. boiler one, No. 42 Rand drill, and 1 Murphy hammer-drill.

TRIBUTORS.

Production.—70, ounces of gold were produced from 228 tons of quartz, this being from the Shaffer-barrel, Sterling-barrel, Rusty, Blue, and Blackie leads; the tributors being H. N. Reeves, John Morrison, Alex. Greenough, Robert Wright, James Mollaly, Andrew McDonald, Charles Donaldson, and Harry Ferguson.

LUNENBURG COUNTY.

Gold River.

CHESTER BASIN GOLD SYNDICATE.

A. B. Stewart.....Manager.
William Crook.....Foreman.

An average of 20 men was employed throughout the year.

Production.—422 ounces of gold were recovered, being the product of 667 tons of quartz and slate crushed. This is 94 tons less than crushed last year, and 504 ounces of gold less than recovered in 1907.

Underground.—The principal work carried on at the main workings was development. A winze was sunk about 40 feet from the hundred-feet level, 80 feet east of the west shaft, and a drift started east. A small amount of ore was stoped between the west level from the west shaft, and the surface, and between the east and west shaft above the 100 feet level, east.

Contact of Mic-Mac fissure with bedded lead, Mic-Mac Mine, Leipsigate.

Vermillion.—In June, this company secured an option on these workings, the west shaft was sunk 30 feet, and the east shaft 12 feet, about 40 tons had been mined up to the end of the year.

Jumbo.—These workings were also unwatered and small tests taken out. In August, on account of shortage of water all mining operations other than pumping had to be discontinued.

Surface.—On the east branch of Gold River about 1000 feet above the main workings, a dam was constructed, and an 8 feet over-shoot wheel installed: this supplies power for pumping and hoisting at the Vermillion. At the main workings, an annex was built to the mill and a small Ingersoll-Sergent compressor put in. A Wilfly concentrating-table was added to the equipment to the mill. Two Hardy stoping-drills: four Whitcomb hammer-drills, and two Murphy hammer-drills have been added to the mine equipment.

Other Properties.

A small amount of mining was done on the Hiseler property to the south of the main workings of the Chester-Basin Syndicate; this work was discontinued in June. Prospecting has been carried on by George Hiseler, P. H. Moore and others, at different parts of the district.

Leipsigate.

MIC-MAC GOLD MINING COMPANY. Thomas W. Moore.....Manager.

From December 1907 to May 1st 1907 an average of 38 men was employed.

Production.—During the period above mentioned, 2692 tons of quartz mined and crushed, yielded 868 ounces of gold, and 194 ounces of silver.

Underground.—Mining operations were not carried on below the 300 feet level, the mine not being unwatered below this. The ore sent to the crusher was from the continuation of the old stopes, practically no drifting being done.

In stoping above the 140 feet level east, the contact of a bedded lead with the Mic-mac fissure was met. This bedded vein was at first thought to be what is known as the Crank-Shaft lead; but subsequent work has proved this not to be the case. No mining has been done on this lead.

In July, a cross-cut from the 200 feet level, 380 feet east of the shaft was driven south 119 feet, cutting a main lead at a distance of 99 feet. An upraise is now being made on this lead. Other than keeping the mine unwatered to the 300 feet level, this is the only work done since May 1st.

Water-power rights have not yet been secured, but the management hope to make definite arrangements in this connection and resume operations.

One Leyner drill-sharpener, and six Murphy air-hammer-drills have been added to the equipment of the mine, and a 38 inch Crocker turbine water-wheel installed at the Power station on the Menankeak Brook.

QUEENS COUNTY.

Brookfield.

OPHIR GOLD MINING COMPANY

G. G. King.....Manager.
Yetten Munroe.....Foreman.

From April 1st to the end of the year an average of 11 men has been employed.

In April, work was commenced in a 700 feet shaft in the southern part of this district, on a three feet fissure lead; sinking was continued and the shaft is now 125 feet deep. At a depth of 65 feet, levels have been driven west 70 feet and east 20 feet, and at the bottom, levels have been driven west 40 feet and east 15 feet. A small amount of stoping was done on the 65 feet level-hand-steel is being used.

Surface.—A shaft-house and mill with concentrating annex have been constructed, and the following machinery installed. One battery of 5 Matheson stamps (formerly in Black Hawk mill, Leipsigate.) One Blake rock-breaker, one Wilfly concentrating-table, one single-drum hoist, one Cameron sinking-pump, one small Northey pump, one boiler and engine.

Malaga Barrens.

W. J. PRISK

W. J. Prisk.....Manager.
Ralph Jameson.....Asst. Manager.

(Malaga Mining Company's property.)

Since July, an average of seven men have been employed.

Face of 300 feet level East, on Foundation Lead, Empress Shaft, Renfrew.

Operations were commenced at the west shaft on the centre or main Rabbit-lead on the 20thof July. This shaft was put down some 15 or 20 years ago by John McGuire, it is 243 feet deep. No work underground has been done other than cleaning out the shaft, and renewing some of the timbers.

On the surface, a shaft-house 46 by 20 feet has been built and a 15 H. P. boiler and a small single-drum hoist installed.

On the Hard-lead, several prospect pits have been put down to depths ranging from 7 to 18 ft.

HANTS COUNTY.

EAGLE MINING COMPANY	O. W. Kramer	Manager.
	H. F. Putnam	Foreman.

An average of 40 men has been employed during the year.

No crushing was done during the year, operations being confined wholly to development and construction work.

What is known as the Empress shaft on the Foundation Lead was pumped out and is being put in shape to commence mining operations. The shaft has been partly retimbered to the 400 feet station, and a new skip-way put in. The levels and cross cuts have been cleaned out and the timbering in the levels renewed, and new tracks laid. The shaft is 400 feet deep and follows the Foundation Lead, this lead dips to the south about 43 degrees. In the past, the Preper Lead to the north and the Hay Lead to the south were worked from cross-cuts driven from the levels on the Foundation Lead.

A small amount of sinking was done at the Eagle shaft on the Maria Walker Lead. In August, work had been discontinued temporarily and has not been resumed up to the end of the year.

Surface.—At the Empress shaft, extensive repairs were made to the shaft-house and an addition built to it. The mine equipment at this mine is as follows:—

1 75 H. P. boiler (from Thompson No. 1 mine.)
1 60 " "
1 double drum hoist, Thompson No. 1 mine.
1 25 H. P. engine " " ".
1 Ingersoll-Sargent compressor 16¼ by 18½ duplex, (new)
1 Cornish pump
1 Cameron sinking-pump 5 inch suction, 4 inch discharge.
1 Northey duplex-pump, 3 inch suction 2½ inch discharge.
3 Murphy air hammer-drills (two No. 4 stoping & one No. 0.)
2 Rand drill No. 42.

VICTORIA COUNTY, C. B.

Middle River.

THE GREAT BRASD'OR GOLD MINING COMPANY — D. Partiquin.....Superintendent.
N. S. Hammond.....Asst. Superintendent.

An average of 31 men has been employed.

Production.—From 2,800 tons of quartz crushed, 590 ounces of gold were recovered, being an average return of 4.21 dwt, from each ton of ore crushed.

Underground.—The lower or working level, 180 feet in from the cross-cut has been driven north-west 200 feet and south-east 250 feet. The cross-cut has been extended 69 feet, and is now in a total distance of 195 feet. The intermediate level has been driven 10 feet and is now in 160 feet. The Scranton, or upper level has not been extended during the year.

Stoping has been carried on from all three levels; the ore from the Intermediate or Scranton level is sent by chutes to the working level off cross-cut, and from here is trammed to the mill.

The Lizard Lode, the one now being worked is irregular in size, course, and pitch. It is in places, 6 feet in width and in other places narrows down to the fraction of an inch—the narrowing and swelling taking place in all directions. Its course in general is that of the strata; its pitch varies from almost vertical to almost horizontal; one wall is fairly well defined, sometimes it is the hanging-wall, and other times the foot-wall. The lode in places contains arsenopyrite chalco-pyrite, galena and other sulphides, and in other places is almost barren of mineral. A total analysis of a sample of concentrate, taken by me, gave the following results:

Great Bras D'Or Gold Mining Company's Crusher at Middle River.

Arsenic	26.26 per cent.
Iron	35.36 "
Sulphur	27.46 "
Silica, Allumina, etc	8.68 "
Nickel	Trace
Gold	2.14 ounces per ton.
Silver	2.46 " "

Surface.—A blacksmiths shop is the only new building constructed.

A pipe-line has been laid in the levels. and air-drills are soon to take the place of hand-steel now being used.

AURIFEROUS ANTIMONY.

Only one company, the Dominion Antimony Co., at West Gore, has mined this mineral. Operations covered the early months of the year. The mill mentioned in last year's report was completed, and operated for a short time, 133½ tons of antimony ore were shipped.

The company got into litigation, and operations were discontinued early in the Spring.

IRON.

30,575 tons of iron ore were mined during the year, 19712 tons at Torbrooke, 9260 at Londonderry and East Mines, 327 tons at Brookfield and 1276 tons at Barrasois, C. B. Owing to depression in business, operations at Londonderry were discontinued in March, the only mining operations since this date, were at Torbrooke, Annapolis County.

Torbrooke.

LONDONDERRY IRON & MINING COMPANY

W. F. C. Parsons . . . . . Superintendent.
S. M Archibald . . . . . Foreman

An average of 80 men was employed throughout the year.

Production.—19712 tons of ore were mined, 13712 being shipped to Londonderry, the remainder being stored at the mine.

Underground.—Since February 1st, work has been confined, to development at No. 2 or the West shaft; this shaft is now 430 feet deep, and sinking is being continued. The length of the different levels are as follows:

No. 1 at a depth of 150 feet, east 160 feet.
" 2 " 244 " " 280 "
" 3 " 350 " " 30 " and west 30 feet.

At No. 1 shaft, levels Nos. 1 and 2 west, and No. 2 east, were extended; the levels from this shaft are now in as follows:

No. 1 east 486 feet, west 575 feet.
" 2 " 506 " " 570 "

From No. 1 level, No. 1 shaft, 465 feet west of the station, a cross-cut was driven north 80 feet, and from the face of this level west, a cross-cut was driven south 31 feet; work was discontinued at No. 1 shaft on February 1st.

COPPER.

Two companies were engaged mining this mineral, namely the Lake Copper Co. at Lochaber, or Copper Lake, in Antigonish County, and the Sterling Mining Co. at Waugh's River, in Colchester Co.

Lochaber.

LAKE COPPER COMPANY — George J. Ross.....Manager.
Frank Munro.....Foreman.

An average of 8 men was employed.

Work was commenced about May 1st and the shaft unwatered, since then work has been carried on underground, cleaning out the old works and retimbering, and putting mine in shape.

The shaft is now 135 feet deep and the following levels have been broken off.

No. 1 level at a depth of 20 feet is in east 125 feet.
" 2 " " 35 " " west 100 "
" 3 " " 100 " " east 120 & west 20 ft.

Two short cross-cuts have been driven from No. 1 level, one north and one south.

About 200 tons of ore were placed in the dump, all coming from the development work.

On the surface, a cook house, office building, and magazine have been constructed. Shaft house has been repaired and a Cameron sinking—pump, 2 inch suction 1 ½ inch discharge, added to the equipment. A small boiler and hoist, formerly belonging to the equipment at the shaft, are also in use.

Waugh's River.

STERLING MINING COMPANY — C. C. Munro.....Manager.
Alex Cameron.....Foreman.

During the year, 240 tons of ore were shipped to the United States which yielded 28,800 lb. of copper. The slope is now 300 feet deep, dipping at an angle of 15 degrees, following the vein. A drift east 40 feet was put in 200 feet. from the mouth of the shaft.

The concentrating-building mentioned in last year's report was completed and the following machinery installed: One 45 H. P. Matheson boiler; one 40 H P. Oxford engine; one 3 drill Rand compressor; one Blake rock-breaker; one set of Oxford rolls; two Wilfly concentrating-tables.

Four air-drills were added to the mine equipment, one Rand little-giant No. 2, 1 McKernan midget and two Rand pluggers.

GYPSUM.

The different companies engaged in this industry report a very dull year. At the close of the year, however, conditions are said to be improving.

Two new companies have been formed and commenced to ship during the year, namely, the Great Northern Gypsum Co. at Eastern Harbour, Inverness Co. and the Newport Plaster, Mining & Manufacturing Co. at Windsor.

The Great Northern Gypsum Co. have constructed a selinite mill at Eastern Harbor and have commenced to manufacture and ship selinite plaster.

The Newport Plaster Mining & Manufacturing Co. have shipped several thousand tons of gypsum from Avondale near Windsor. They have not yet commenced to manufacture selinite.

The industry employed, during nine months of the year, 600 men and is fast becoming a most important one to the Province.

The Companies engaged in the industry, with the addition of those added above, are the same as during 1907.

BRICK-YARDS AND STONE QUARRIES.

Both of these industries report a very dull year, especially the companies engaged in stone quarrying. I have not heard of any new companies engaging in either branch during the year.

Wentworth Gypsum Company's Quarry near Windsor.

Wentworth Gypsum Company's Quarry near Windsor.

TUNGSTEN.

A discovery of the tungsten bearing mineral "Scheelite" at the western part of Moose River Gold District, by John A. Reynolds and W. S. Curry, promises to be of great importance. Tungsten bearing minerals have been found at three other places in the Province.—namely, at Emerald near South East Margaree in the County of Inverness, at Molega-Barrens Gold District, Queens County, and at New Ross, in Lunenburg County; but at none of the places has it been found in economic quantities as appears to be the case at Moose River.

The following excerpt from a paper on the Moose-River occurrence read by Mr. A. L. McCallum, B. S. c, before the Nova Scotia Institute, should be of interest:

"The deposit under consideration is situate at the western boundary of the Moose-River Gold District, being about 1½ miles west of the old Touquoy crusher.

The first discovery made was a boulder eontaining a fairly large amount of tungstite. Up to the present no more of the tungstite has been found but always unaltered scheelite.

The first scheelite drift was found in the bed of a small brook which runs through the property.

Scheelite drift was found quite plentiful in this brook up to a point beyond which, at that time, we were not able to find any more. At this place a cut was made in the brook with the result that the first scheelite vein was found. A small trial pit was sunk at this place and another one a little further east on the same vein.

The formation shown by this work was as follows:

Very sharply defined whin walls with a three feet slate belt between, dipping at an angle of about 75 N. The vein is on the foot-wall and consists of a series of lenses of varying sizes.

The vein is composed of scheelite, quartz and a little mispickel. The vein matter is very irregular in composition, varying from pure scheelite to pure quartz or pure mispickel and all combinations of these three.

Subsequently drift was found north of this vein and eventually three veins found about 50 feet north.

To the south of this first vein, ten veins in all have been opened up.

Several of these at the points opened up are of too low grade to be of any value. The rest are all fairly high grade.

On account of the great variation in the composition of the vein it is difficult to form an opinion of the average contents of the veins taken as a whole, but leaving out those that are two low grade, the remainder will probably average between 30 and 50 p. c. scheelite.

So far, prospecting has been confined to a belt 200 feet wide north and south and a distance about 1200 feet east and west.

The total width of vein in the 200 feet, would be about 50 inches.

Wolframite has been known for centuries to German and Cornish tin-miners. They found by experience, when smelted with tin in the furnace, it impeded the reduction of the tin and facilitated its scorification, so they thought it ate up the tin as the wolf eats the sheep, hence the derivation of the word Wolfram.

In Cornwall, the miners termed it "call" or mock lead, on account of its great weight, thinking that it contained lead. But the Swedish chemist Scheele proved in 1781, that this mineral as well as another which he had called tungsten contained a specific mineral acid now called tungstate acid and that wolframite is essentially a tungstate of iron, and tungsten now called scheelite is tungstate of lime.

These minerals were employed in 1840 by the English chemist Robert Oxland, for the preparation of tungstate of soda to be used as a mordant in dying cloth and as proposed by Versmann and Lyon Playfair for the impregnation of vegetable tissues, linen and cotton, to render them non-inflammable and almost fire-proof. Its greatest use is as an alloy with steel.

Tungsten steel was first made in 1855 in Austria. Introduced to the trade later by Mushet, an Englishman. It makes armor plate very tough and difficult to fracture and split. In projectiles and high-speed tools, it forms an alloy which retains its temper at a red heat; it makes car springs stiffer. It increases the permanency of magnets and makes a more powerful response in sounding plates and wires for musical instruments.

It is commonly stated that it will take the place of carbon in producing hardness, but this is not true. It is more correct to say that it will assist carbon in producing hardness and, therefore, high tungstate-steels may have a lower carbon.

No amount of tungsten or any other element will make steel hard in the absence of carbon, or even where the carbon is low. The tungsten produces hardness by its effect on the condition of the carbon, that is, by helping to retain the carbon in its solid solution and not by any effect of its own. It is for this reason that a lesser amount of carbon will produce hardness in the presence of tungsten or other similar elements."

I have the honor to be,

Your obedient servant,

H. B. PICKINGS.

GOVERNMENT DRILLS.

HIRAM DONKIN, ESQ., C. E.,

Deputy Commissioner of Public Works & Mines,

SIR:—

I beg leave to submit to you my report on boring by Government drills for the year ended September 30th, 1908.

During the year 22 holes were put down, making a total of 7,905 feet 7 inches bored, this being 1,632 feet 6 inches greater than the number of feet bored during the year 1906-07, and establishing a new record.

The expenditure for repairs to drills, maintenance of storehouse, wages, etc., was $4,690.40, this is $1,443.09 greater than last year's expenditure, but it is very low in comparison with other years, considering the number of feet bored.

The yearly cost to the Department, and number of feet bored to date, is as follows :—

	Feet bored.	Cost to Department.
1900-1901 (18 months).....	5,000	$ 20,205,21
1902.....	4,143	4,215,26
1903.....	5,124	12,979,43
1904.....	4,834	6,903,37
1905.....	4,688	7,204,00
1906.....	2,839	5,927,94
1907.....	6,273	3,247,31
1908.....	7,905	4,690,40
	40,806	$ 65,372,92

The detailed cost for the last year was as follows:

Drill No. 1.....	$ 905.85
" 2.....	335.82
" 3.....	294.93
" 5.....	829.59
" 6.....	1,671.18
Storehouse and miscellaneous.....	653.03
Total	$ 4,690.40

Number five Government drill at Mines Roads, Cape Breton, number one hole.

I regret to have to report the loss of two holes, one at Birch Grove, in Cape Breton County, at a depth of 1170 feet, 11 inches, and one at Newville, in Cumberland County, at a depth of 2,518 feet.

The loss of the Birch Grove hole was caused by the key coming out of the safety shackle, letting the hole-gear and 14 rods drop to the bottom of the hole. In dropping, one of the rod-couplings struck against the rotating table, breaking the dome, a piece of which fell into the hole, and although repeated efforts were made to recover the rod, these were unsuccessful, and the hole had finally to be abandoned.

The loss of the Newville hole was caused by the breaking of a rod while drawing out, letting 21 rods with core-barrel, calyx etc., drop to the bottom of the hole. After several attempts the drill runner, Mr. Mumford, succeeded in recovering all rods but one, and while fishing for the remaining rod and hole-gear, the fishing tool broke and became jammed in the hole, repeated efforts to recover this tool proved unsuccessful and the hole was finally abandoned.

The average cost per foot for boring by all drills (excepting the Newville hole put down by No. 6 drill) was $1.06.

The cost per foot for all boring by Diamond drills was 80½ cents, and by Calyx drills $1.34. The carbon cost per foot in boring by Diamond drills was $.077, and the shot-cost per foot by Calyx drills, $.056. These costs compared with last years results were as follows :

	1907	1908		
Cost per foot for all boring.....	$1.23	$1.06	Decrease	17c.
" " " Calyx boring.....	1.71	1.34	"	31c.
" " " Diamond boring...	.73	.845	Increase	11c.
Shot-cost per foot boring by Calyx drills	.047	.056	"	.009c.
Carbon " " Diamond...	.0129	.077	"	.041c.

Drills No 4 and 7 remained in the store-house at Hantsport during the whole year.

The itinerary-table brought up to date, is attached.

A record of the strata passed through by Mr. McNaughton's drill, near Trenton, Pictou County, will be found immediately following this report.

ITINERARY TABLE.

No. and Description of Drill.	Locality of Boring.	Mineral Bored for.	Dates of Occupation.
No. 1. Calyx steam 1500. Core 4 to 6 inches diameter	Nictaux, Annapolis Co.	Iron.	Oct., 1900, to June, 1901.
	Kennetcook, Hants Co.	Coal.	Aug., 1901, to Dec., 1901.
	River Inhabitants, Rich. Co.	"	Mar., 1902, to Sept., 1902.
	Glendale, Richmond Co.	"	Sept., 1902, to Oct., 1902.
	Port Hood, Inverness Co.	"	Oct., 1902, to Dec., 1903.
	St. Rose, " "	"	Dec., 1903, to July, 1904.
	Cheticamp, " "	"	July, 1904, to Jan., 1905.
	Torbrook, Annapolis Co.	Iron.	Jan., 1905, to June, 1905.
	Storehouse.	—	June, 1905, to June, 1906.
	Mines Road, Richmond Co.	Coal.	June 1906, to Oct., 1906.
	Storehouse.	—	Oct., 1906, to Dec., 1906.
	Gardener Mines, C. B. Co.	Coal.	Dec., 1906, to May, 1907.
	South Bar. " "	"	May, 1907, to Aug., 1907.
	Storehouse.	—	Aug., 1907, to Dec., 1907.
	Morien, C. B. Co.	Coal.	Dec., 1907, to Aug., 1908.
	New Glasgow, Pictou Co.	"	Aug., 1908.

No. 2. Diamond steam 850 feet. Core 15/16 inch diameter	Pottle's Lake and Ferris Lake, Cape Breton Co.	Coal.	Nov., 1900, to Oct., 1901.
	Drummond Colliery, Pictou Co.	"	Nov., 1901, to Nov., 1902.
	Foxbrook Road.	"	Nov., 1902, to Sept., 1903.
	Stanley, Hants Co.	"	Sept., 1903, to April, 1904.
	Kemptown, Col. Co.	"	April, 1904, to Aug., 1904.
	Storehouse.	—	Aug., 1904, to Jan., 1905.
	Caribou, Halifax Co.	Gold.	Jan., 1905, to June, 1905.
	Storehouse.	—	June, 1905, to July, 1905.
	Debert, Colchester Co.	Coal.	July, 1905, to March, 1906.
	Storehouse.	—	March, 1906, to June, 1906.
	Torbrook, Annapolis Co.	Iron.	June, 1906, to Sept., 1906.
	Tracadie, Antigonish Co.	Coal.	Sept., 1906, to Dec., 1906.
	Westville, Pictou Co.	"	Dec., 1906, to Feb., 1907.
	Storehouse.	—	Feb., 1907, to March, 1907.
	Long Point, Inverness Co.	Coal.	March, 1907, to June, 1907.
	Merigomish, Pictou Co.	"	June, 1907, to Nov., 1907.
	New Glasgow, Pictou Co.	"	Nov., 1907.

ITINERARY TABLE.—*Continued.*

No. and Description of Drill.	Locality of Boring.	Mineral Bored for.	Dates of Occupation.
No. 3.	Whycocomagh, Inverness Co.	Iron.	1901, to Oct., 1901.
Diamond	Bridgeport Basin, C. B., Co.	Coal.	Nov., 1901, to Nov., 1902.
steam.	Mira Road, Cape Breton Co.	"	Nov., 1902, to July, 1903.
400 feet.	Polson's Brook, Antigonish Co.	Iron.	July, 1903, to Oct., 1903.
Core 15/16 inch	Pleasant Valley, Antigonish Co.	Coal.	Oct., 1903, to Dec., 1903.
diameter	Storehouse.	—	Dec., 1903, to Jan., 1905.
	Torbrook, Annapolis Co.	Iron.	Jan., 1905, to June, 1905.
	Storehouse.	—	June, 1905, to March, 1906.
	Long Point, Inverness Co.	Coal.	March, 1906, to Feb., 1907.
	Storehouse.	—	Feb., 1907, to July, 1907.
	Inverness, Inverness Co.	Coal & Gyps'm	July, 1907, to Oct., 1907.
	Storehouse.	—	Oct., 1907, to March, 1908.
	Woodburn, Pictou Co.	Coal.	March, 1908, to May, 1908.
	Storehouse.	—	May, 1908, to July, 1908.
	Port Morien, C. B. Co.	Coal.	July, 1908, to Aug., 1908.
	Grand Lake, " "	"	Aug., 1908.

No. 4. Diamond hand 400 feet. Core. 15/16 inch diameter	Musquodoboit Valley, Halifax Co.	Coal.	1901, to March, 1902.
	Stewiacke Valley, Halifax Co.	"	March, 1902, to Oct., 1902.
	South Maitland, Hants Co.	"	Oct., 1902, to Feb., 1903.
	Lake Ainslie, Inverness Co.	Iron.	Feb., 1903, to May, 1903.
	Boularderie Island, C. B. Co.	Coal.	May, 1903, to Oct., 1903.
	Glendale, Inverness Co.	"	Oct., 1903, to Dec., 1903.
	Storehouse.	—	Dec., 1903, to July, 1905.
	Debert, Col. Co.	Coal.	July, 1905, to March, 1906.
	Storehouse.	—	March, 1906, to Aug., 1906.
	Baddeck, Victoria Co.	Coal.	Aug., 1906, to March, 1907.
	Storehouse.	—	March, 1907.
No. 5. Calyx steam 1500 feet. 4 to 6 inches diameter	Hantsport, Hants Co.	Coal.	Sept., 1901, to Aug., 1903.
	Apple River, Cumberland Co.	"	Sept., 1903, to Jan., 1905.
	Storehouse.	—	Feb., 1905, to Feb., 1907.
	Homeville, C. B. Co.	Coal.	Feb., 1907, to Sept., 1907.
	Storehouse.	—	Sept., 1907, to Feb., 1908.
	River Inhabitants, Richmond Co.	Coal.	Feb., 1908.
No. 6. Calyx steam 3000 feet. 4 to 7 inches diameter	New Glasgow, Pictou Co.	Coal.	Sept., 1902, to Sept., 1904.
	Port Morien, C. B. Co.	"	Sept., 1904, to June, 1905.
	Storehouse.	—	June, 1905, to May, 1906.
	Newville, Cumberland Co.	Coal.	May, 1906, to Sept., 1908.
No. 7. Calyx hand 350 feet.	Broad Cove, Inverness Co.	Coal.	March, 1902, to June, 1903.
	Port Hood, Inverness Co.	"	July, 1903, to Sept., 1903.
	Barra Head, Richmond Co.	Limestone.	Oct., 1903, to Dec., 1903.
	Westville, Pictou Co.	Coal.	Feb., 1904, to April, 1904.
	Storehouse.	—	April, 1904.

Drill No. 1.

Number 1 hole.

Steam Calyx, producing 6 inch core.

BIRCH GROVE, near Port Morien, C. B. (two holes)

Location—Birch Grove, about one-half mile east of Merill-pit shown on geological survey map and about 600 feet south of crop line.

Hole put down for Dominion Iron and Steel Co.

Mineral Sought, Coal.—dip of strata 4 degrees north.

Fastest rate of boring.—3 feet in one hour.

Average rate of boring—.6 of a foot per hour.

Commenced boring January 15th, 1908; finished hole, March 21, 1908.

Boring double shift.

NAME OF ROCK	COLOR AND OTHER GENERAL CHARACTERISTICS.	THICKNESS BORED		TOTAL DEPTH	
		Feet	In.	Feet	In.
Surface	Clay and boulders	5	0	5	0
Sandstone	Grey coarse	20	7	25	7
Shale	Bluish green micaceous arenaceous, with sandy bands	25	8	51	3
Shale	Bluish green, very hard, with grey limestone	20	2	71	5
Sandstone	Light grey, coarse, slightly micaceous	19	6	90	11
Shale	Dark grey, very coaly	8	0	98	11
Coal	Bituminous	1	6	100	0
Shale	Dark	1	7	102	5
Coal	Bituminious	5	10	107	10
Fireclay	Light		6	108	4
Sandstone	Grey, slightly micaceous with bands of grey shale	30	10	139	2
Shale	Chocolate red with bands of blue and grey	34	1	173	3

Name of Rock	Color and Other General Characteristics.	Thickness Bored		Total Depth	
		Feet	In.	Feet	In.
Sandstone...	Bluish grey.....	106	7	279	10
Shale.....	Black or dirty coal.....		6	280	4
Sandstone..	Grey showing fossils.....	38	5	318	9
Shale.....	Dark	5	0	323	9
Coal.....	Bituminous	.....	8	324	5
Shale.....	Blue.....	1	6	325	11
Sandstone...	Grey.....	6	0	331	11
Shale.....	Dark showing fossils and small seams of coal	8	5	340	4
Sandstone...	Grey with fossils.....	41	8	382	0
Shale.....	Dark	3	0	385	0
Coal.....	Dirty.....	1	6	386	6
Shale.....	Light	.....	4	386	10
Coal.....	Dirty.....	.....	9	387	7
Shale.....	Grey.....	5	0	392	7
Sandstone....	Grey.....	41	5	434	0
Coal.....	Dirty.....	.....	6	434	6
Shale.....	Dark Blue.....	13	3	447	9
Sandstone...	Grey	7	11	455	8
Shale.....	Dark.....	2	2	457	10
Coal.....	Bituminous	3	6	461	4
Shale.....	Dark	5	7	466	11
Sandstone....	Grey.....	10	0	476	11
Shale.....	Dark blue.....	59	5	536	4
Coal.....	Dirty.....	4	0	540	4
Fireclay.....	Dark	2	0	542	4
Sandstone...	Grey.....	3	0	545	4
Shale.....	Dark.....	3	0	548	4
Coal and Shale	Mixed	1	9	550	1
Shale and Fireclay..	Mixed, soft and grey.....	4	0	554	1
Sandstone....	Grey.	13	0	567	1
Shale.....	Dark	12	8	579	9
Sandstone....	Light grey	21	8	601	5
Shale.....	Greenish grey.....	4	0	605	5
Sandstone....	Grey, fine grained, hard.....	7	6	612	11
Coal.....		.....	6	613	5
Shale.....	Bluish grey with some fossil plants.....	11	0	624	5
Sandstone....	Light grey	8	3	632	8

Name of Rock	Color and Other General Characteristics.	Thickness Bored		Total Depth	
		Feet	In.	Feet	In.
Shale.....	Very dark grey somewhat slicken-sided and easily fractured in various directions...	23	3	655	11
Sandstone...	Greenish grey slightly argillaceous.....	33	4	689	3
Shale.....	Dark Grey with obscure plant remains.....	4	2	693	5
Sandstone...	Grey slightly argillaceous, with a few calanite leaves.....	2	0	695	5
Shale.....	Very dark grey soft and much slicken-sided.....	10	10	706	3
Shale.....	Brownish red slicken-sided....	3	0	709	3
Sandstone...	Grey with obscure brownish red mottlings.....	2	0	719	3
Shale.....	Brownish red mottled with grey	4	0	715	3
Sandstone....	Grey.....	1	4	716	7
Shale.....	Red blue sandy.....	3	5	720	0
Shale.....	Bluish with sandy bands.....	40	7	760	7
Coal.....		1	10	762	5
Shale.....	Blue.....	7	1	769	6

This hole cost, $1178.79 or $1.54 per foot, made up as follows:

Labor (including truckage).....	$ 664	26
Management.....	241	28
Coal.....	171	00
Light, oil, waste, etc.....	7	00
Shot.....	56	25
Gravel.....	3	00
Lumber, etc.....	30	00
Casing-pipe.....	5	11
	1178	79

No. 2 Hole.

Location.—One and one half miles south of No. 1 hole, and about 250 yards north of a small brook running east and west.

Mineral Sought.—Coal, dip of strata varying from 29 degrees to 7 degrees at bottom.

Fastest rate of boring.—three feet in one hour, in sandstone.

Average rate of boring—.58 feet per hour.

Commenced boring March 30th, finished hole July 11th, 1908. Boring double shift.

Name of Rock.	Color and other General Characteristics.	Thickness Bored.		Total Depth.	
		Feet	In.	Feet	In.
Surface.	Clay and boulders	10	0	.....	.....
Sandstone. ...	Bands of red and grey.	106	5	116	5
Congomerate.	Grey.....	5	0	121	5
Sandstone. ...	Grey.....	30	7	152	0
Shale.	Red sandy	11	7	163	7
Sandstone. ...	Grey.....	16	1	179	8
Shale	Red and sandy	35	5	215	1
Sandstone. ...	Grey.....	7	6	222	7
Shale....	Red.....	17	6	240	1
Sandstone. ...	Red & grey with bands of shale.	131	4	371	5
Sandstone. ...	Red.....	11	6	382	11
Shale....	Grey.....	12	0	394	11
Sandstone. ...	Grey.....	18	1	413	0
Shale....	Blue.....	4	0	417	0
Sandstone. ...	Red with bands of shale	37	5	454	5
Shale.	Blue.....	21	1	475	6
Sandstone	Grey.....	12	3	487	9
Shale.....	Blue.....	22	3	510	0
Sandstone. ...	Grey.....	7	6	517	6
Shale..... ...	Red and blue bands	48	6	566	0
Sandstone. ...	Fine grey	26	6	592	6
Conglomerate	Grey.....	5	0	597	6
Shale....	Blue hard and sandy.....	9	6	607	0
Shale....	Red hard and sandy.....	36	9	643	9
Shale....	Blue.....	2	0	645	9
Shale....	Red with sandy bands.	41	11	687	8
Sandstone. ...	Grey.....	13	6	701	2
Shale....	Hard blue sandy	22	1	723	3
Sandstone. ...	Grey.....	11	2	734	5
Shale....	Blue.....	12	1	746	6
Sandstone. ...	Grey.....	70	1	816	7
Shale....	Blue with sandy red bands	71	2	887	9
Sandstone. ...	Grey.....	10	5	898	2
Shale....	Red.....	10	0	908	2

Name of Rock.	Color and other General Characteristics.	Thickness Bored.		Total Depth.	
		Feet	In.	Feet	In.
Shale..... ...	Dark blue with sandy bands...	1	.....	909	2
Shale..... ...	Reddish.....	15	6	924	8
Shale..... ...	Dark blue with sandy bands, showing fossils.....	89	7	1014	3
Shale..... ...	Reddish with bands of grey sandstone	68	9	1073	0
Shale..... ...	Black.....	5	0	1078	0
Sandstone. ...	Fine grey	7	0	1085	0
Shale..... ...	Dark.....	10	5	1095	5
Coal	....	1	0	1096	5
Shale....	Blue.....	21	2	1117	7
Sandstone	Grey.....	4	1	1121	8
Shale....	Dark with sandy bands...	5	0	1126	8
Sandstone	Fine grey	8	6	1135	2
Shale....	Dark blue	3	0	1138	2
Coal	....	.....	6	1138	8
Shale.	Blue.....	1	6	1140	2
Sandstone	Fine grey	13	6	1153	8
Shale.	Dark.....	2	0	1155	8
Coal	....	.....	6	1156	2
Shale....	Dark.....	1	3	1157	5
Sandstone... .	Fine grey	9	9	1167	2
Shale....	Blue showing fossils.....	3	9	1170	11

Lost hole at depth of 1,170 feet 11 inches.

This hole cost, $1803,16 or, $1.54 per foot made up as follows :

Labor, (including truckage).....	$	994 66
Management.....		331 00
Coal.....		200 00
Light, oil, waste, etc.....		8 00
Shot.....		67 50
Gravel.....		5 00
Lumber.....		15 00
Casing-pipe.....		14 00
Short bits and core-barrels used		168 00
Total.....	$	1803 16

From Cape Breton, this drill was shipped to New Glasgow and commenced boring for the Nova Scotia Steel and Coal Company about one mile outside of New Glasgow: at the end of the fiscal year the hole had reached a depth of 14 feet.

Drill No. 2.

Steam Diamond producing 15/16 inch core.

MERIGOMISH, PICTOU CO.

NO. 2 HOLE.—(2 holes.)

Location.—Merigomish. 3/4 of a mile north-east of the railway station and on the property of Joseph Stewart.

Hole put down.—for Mr. H. E. Coll.

Mineral sought.—coal, dip of strata 15 degrees north-west.

Fastest rate of boring.—4 feet 8 inches, in grey sandstone.

Average rate of boring.—1.46 feet per hour.

Commenced hole September 18, finished boring Oct., 30, 1907.

Boring single shift.

Note.—This hole was put down to a depth of 190 feet 10 inches during the last fiscal year.

Name of Rock.	Color and other Genenal Characteristics.	Thickness Bored.		Total Depth.	
		Feet	In.	Feet	In.
Surface	Clay and boulders	16	0	16	0
Sandstone	Grey	58	7	74	7
Shale	Grey	23	2	97	9
Sandstone	Grey	12	5	110	2
Shale	Grey	16	10	127	0
Sandstone	Grey	16	0	143	0
Sandstone	Grey with bands of grey shale.	25	0	168	0
Sandstone	Grey	22	10	190	10
Sandstone and Shale	Red in bands	25	5	216	3
Sandstone	Red	16	0	232	3
Sandstone	Grey	12	3	244	6
Sandstone and Shale	Red in bands	17	10	262	4
Sandstone	Grey	13	4	275	8
Sandstone	Red	3	4	279	0
Shale	Red	46	6	325	6
Sandstone	Red	15	4	340	10
Sandstone	Grey	1	5	342	3
Shale	Red	6	0	348	3
Shale	Grey	3	3	351	6
Shale	Red	49	6	401	0
Sandstone	Red	11	3	412	8
Sandstone	Grey	5	3	417	11
Shale	Red	26	5	444	4
Sandstone	Red	13	2	457	6
Shale and Sandstone	Soft red shale with small bands of sandstone	78	6	536	0

This hole cost $409.57, or 76.5 cents per foot, made up as follows:—

Labor including freight and truckage	$ 133	00
Management	244	90
Fuel	10	57
Light, oil, waste, etc	1	10
Carbon wear	5	00
Lumber	1	75
Core-lifters and bits	13	25
Total	$ 409	57

NEW GLASGOW.—Five holes.

Hole, Number 1.

Location.—New Glasgow on the north branch of Pottle's brook, about 600 feet north of what is known as Chisholm's pond and about ¼ mile east of the East River road.

Hole put down for—Acadia Coal Co.

Mineral sought—Coal.

Fastest rate of boring—5 feet in one hour in hard grey sandstone.

Average rate of boring.—1.4 feet per hour.

Commenced hole December 9th, 1907, finished boring Feb., 24th, 1908.

Boring single shift.

Name of Rock.	Color and other General Characteristics.	Thickness Bored.		Total Depth.	
		Feet	In.	Feet	In.
Surface.	Clay	7	0	....	....
Sandstone.	Coarse grey	8	10	15	10
Coal.		.....	7	16	5
Shale.	Grey	7	7	24	0
Sandstone.	Hard grey	9	7	33	7
Shale.	Grey with bands of hard sandstone	12	5	46	0
Sandstone.	Hard grey	26	7	72	7
Shale.	Dark grey	8	9	81	4
Shale.	Dark grey with bands of hard grey sandstone	27	8	109	0
Shale.	Black with bands of hard sandstone	35	2	144	2
Sandstone.	Grey	9	4	153	6
Shale.	Grey with bands of hard sandstone	15	0	168	6
Shale.	Black	18	9	187	3
Coal		4	0	191	3
Shale.	Grey	2	3	193	6
Sandstone.	Hard grey	6	4	199	10
Shale.	Grey	5	5	205	3

Name of Rock.	Color and other General Characteristics.	Thickness Bored.		Total Depth.	
		Feet	In.	Feet	In.
Sandstone and Shale	Grey in bands	17	7	222	10
Sandstone	Grey	39	2	262	0
Shale	Black	13	3	275	3
Shale	Grey	7	10	283	1
Sandstone	Grey	27	7	310	8
Shale and Sandstone	Grey with bands of hard grey sandstone	30	2	340	10
Sandstone	Hard grey	15	10	356	8
Shale	Grey slightly arenaceous	56	10	403	6
Shale	Black slightly arenaceous	7	6	411	0
Shale	Grey	12	5	423	5
Sandstone	Light grey fine grained	3	4	426	9
Shale	Soft, red	18	3	445	0
Shale	Grey	15	0	460	0
Shale	Grey with bands of grey sandstone with false bedding	68	2	528	2
Shale	Grey with bands of ironstone	19	2	547	4
Shale	Grey with narrow bands of black	28	6	575	10
Shale	Grey	10	8	586	6
Shale	Black	137	2	723	8
Shale	Dark grey with narrow bands of light grey	98	8	822	4
Shale	Black	17	8	840	0
Shale	Bands of light and dark grey	49	0	889	0
Shale	Black	20	0	909	0

This hole cost $580,66 or 63.8 cents per foot made up as follows:

Labor, including freight	$ 130 70
Management	336 25
Coal	36 00
Light, oil, waste, etc	5 51
Carbon wear	2 00
Lumber	16 89
Casing, pump, pipe, etc	32 56
Core-lifters and bits	20 75
Total	$ 580 66

Hole, Number 2.

Location.—Lourdes on the west side of the East River about 1000 feet north of the I. R. C. bridge and 150 feet from East River.

Mineral sought.—Coal, dip of Strata south east, very irregular from 26 degrees to vertical.

Fastest rate of boring.—3 feet, 6 inches in grey shale.

Average rate of boring.—1.2 feet per hour.

Commenced hole March 4th, finished boring May 30, 1908.

Boring single shift.

Name of Rock.	Color and Other General Characteristics.	Thickness Bored.		Total Depth.	
		Feet	In.	Feet	In.
Surface.....	Clay.....	12	5	....	....
Shale	Grey.....	93	11	106	4
Shale	Dark grey.....	73	8	180	0
Shale	Black.....	19	6	199	6
Shale	Grey.....	81	4	280	10
Shale	Dark grey.....	7	2	288	0
Shale	Grey.....	21	6	309	6
Shale	Light and dark grey, banded..	38	6	348	0
Shale	Very dark grey.....	165	5	513	5
Shale	Grey and dark grey banded...	5	4	518	9
Shale	Grey and dark grey, banded with bands of ironstone....	17	7	536	4
Shale	Dark grey.....	22	10	559	2
Shale	Dark and light grey banded...	63	0	622	2
Shale	Very dark grey.....	175	2	797	4
Shale	Grey and dark grey banded...	14	8	812	0
Shale	Black cactaceous.....	25	7	837	7
Shale	Grey with bands of clay-ironstone.....	4	5	842	0

This hole cost $639.57, 57.9 or cents per foot made up as follows:

Labor, (including freight)	$ 130 15
Management	363 70
Fuel	30 00
Light, oil, waste, etc.	55 00
Steel shot	4 00
Blank bits, core-lifters, shells	32 10
Repairs to engine (broken while drilling)	20 00
Total	$ 639 57

Hole Number 3.

Location.—Lourdes, on property of the Acadia Coal Company near the south west corner of Lourdes cemetery about ¼ of a mile south of Conolly's ice-house and dam.

Mineral sought.—Coal, dip of strata varying from 15 degrees to 42 degrees north-east.

Fastest rate of boring.—5 feet in one hour in coal.

Average rate of boring.—1.4 feet per hour.

Commenced boring June 11th, finished hole August 4, 1908.

Boring single shift.

Name of Rock.	Color and Other General Characteristics.	Thickness Bored.		Total Depth.	
		Feet	In.	Feet	In.
Surface	Clay	29	6	.....	.....
Shale	Grey	21	6	51	0
Shale	Black, carbonaceous	27	0	78	0
Shale	Very dark grey, with bands of grey sandstone	35	9	113	9
Shale	Dark green with bands of ironstone	50	0	163	9
Shale	Dark grey	33	11	197	8
Shale	Grey, arenaceous fine grained	5	4	203	0
Sandstone	Coarse, hard, grey, banded	21	8	224	8
Shale	Very dark grey	42	10	267	6
Shale	Dark grey with bands of ironstone	77	6	345	0
Shale	Grey and dark grey with bands of ironstone	25	2	370	2
Shale	Dark grey	19	3	389	5
Shale	Grey and dark grey with bands of ironstone	40	4	429	9
Coal		34	3	464	0
Shale	Black	4	0	468	0
Shale	Grey, hard	3	7	471	7
Shale	Very dark grey	3	9	475	4
Shale	Dark brown	4	2	479	6
Shale	Dark grey	50	4	529	10
Shale	Grey, finely grained banded	57	10	587	8
Shale	Dark brown	34	1	621	9
Coal		22	5	644	2
Shale	Dark brown	1	10	646	0

This hole cost $391.27 or 60.5 cents per foot made up as follows:

Labor	$ 79 50
Management	248 75
Fuel	21 00
Oil, waste, etc	9 22
Carbon wear	20 00
Core lifters, bits, coreshells	12 80
Total	$391 27

Hole Number 4.

Location,—Albion Mines 600 feet, south 60 degrees west of McGregor pit-engine house, hole drilled on an angle of 68 degrees.

Mineral sought.—Coal, dip of strata north east 22 degrees.

Fastest rate of boring.—5 feet in one hour, in grey sandstone.

Average rate of boring.—1.5 feet per hour.

Commenced boring August 11th, finished hole September 19, 1908.

Boring single shift.

Name of Rock.	Color and other Genenal Characteristics.	Thickness Bored.		Total Depth.	
		Feet	In.	Feet	In.
Surface	Clay	8	0	....	....
Fire-clay	Grey	30	6	38	6
Shale	Dark grey	1	0	39	6
Sandstone	Light grey hard	43	11	83	5
Fire-clay	Grey	16	7	100	0
Sandstone	Grey, hard	2	8	102	8
Fire-clay	Grey	7	7	110	3
Shale	Black carbonaceous	2	3	112	6
Fire-clay	Light grey	18	1	130	7
Shale	Black	3	5	134	0
Coal	Coarse or shaley coal	2	9	136	9
Shale	Very dark grey slightly carbonaceous	17	7	154	4
Shale	Coaly shale	3	6	157	10
Sandstone	Hard, grey	21	8	179	6
Fire-clay	Light grey	9	0	188	6
Sandstone	Brown, fine grained, hard	.....	9	189	3
Fire-clay	Grey	8	5	197	8
Sandstone	Light grey, hard	9	11	207	7
Fire-clay	Grey	5	3	212	10
Shale	Black, carbonaceous	2	8	215	6
Sandstone	Light grey, hard	15	6	231	0
Shale	Grey	6	7	337	7
Sandstone	Light grey, hard	7	8	245	3
Shale	Grey	5	4	250	7
Sandstone	Light grey, hard	16	3	266	10
Fire-clay	Grey	12	0	278	10
Shale	Coaly	.....	10	279	8

Name of Rock	Color and Other General Characteristics.	Thickness Bored		Total Depth	
		Feet	In.	Feet	In.
Shale	Black, carbonaceous	4	9	284	5
Fire-clay	Grey	6	0	290	5
Shale	Very dark grey	7	2	297	7
Fire-clay	Grey	9	2	306	9
Shale	Grey	10	6	317	3
Shale	Black (with fossil fern remains)	6	2	323	5
Shale	Light grey	9	3	332	8
Coal	Coarse, shaly	3	4	336	0
Shale	Black, carbonaceous	3	6	339	6
Coal	Coarse mixed with carbonaceous shale	9	0	348	6
Shale	Black slightly carbonaceous	3	2	351	8
Sandstone	Grey, hard, fine grained	14	10	366	6
Fire-clay	Grey	8	0	374	6
Sandstone	Grey, hard, fine grained	4	2	378	8
Fire-clay	Grey, with nodules of clay-ironstone	57	8	436	4
Sandstone	Grey, hard, fine grained	3	5	439	9
Fire-clay	Grey	17	1	456	10
Sandstone	Brown, hard	3	3	460	1
Shale	Black, slightly carbonaceous	4	0	464	1
Fire-clay	Grey	6	2	470	3
Fire-clay	Grey with nodules and bands of clay-ironstone	29	29	500	0

This hole cost $311.56 or 62.7 cents per foot made up as follows:—

Labor (including truckage)	$	66 55
Management		180 20
Fuel		15 00
Light, oil, waste, etc		3 51
Carbon wear		31 00
Black bits, core-lifters, steel shoe		15 30
Total	$	311 56

Hole Number 5.

Number 5 hole was started on September 25th and had reached a depth of 92 feet 6 inch at the end of the fiscal year, the record of this hole will be published in next year's report.

Drill No. 3.

Hand Diamond, producing 15-16 inch core.

WOODBURN, PICTOU CO.

From April 1st to May 12, 1908 this drill was in operation for the Woodburn Mining Company at Woodburn, putting down six shallow holes.

Number 1 hole is situated about 400 yards north-east of Ballantyne's cut on the Intercolonial Railway at Woodburn, and on the property of Blanchard Small, 250 yards south of Small's brook and 350 yards off the main road.

Number 2 hole is situated about 200 yards west of Number 1 hole.

Number 3 hole is situated about 400 yards west of Number 2 hole.

Number 4 hole is situated about 300 yards north of Number 3 hole.

Number 5 hole is situated on the property of J. D. Stewart and about 200 yards west of Number 4 hole.

Number 6 hole is situated on the property of George Milne and about 400 yards east of Number 1 hole.

Mineral sought—Limestone suitable for the manufacture of cement.

Boring all done single shift.

NAME OF ROCK.	COLOR AND OTHER GENERAL CHARACTERISTICS.	THICKNESS BORED.		TOTAL DEPTH.	
		Feet	In.	Feet	In.
	NO. 1 HOLE.				
Surface	Clay	14	....	....	....
Limestone	Light Grey	2	6	16	6
Clay	Red	4	0	20	6
Limestone	Light Grey	15	3	35	9
Clay	Red	....	9	36	6
Limestone	Light Grey	5	0	41	6
Clay	Red	2	2	43	8
Limestone	Light grey	4	3	47	11

Name of Rock	Color and Other General Characteristics.	Thickness Bored		Total Depth	
		Feet	In.	Feet	In.
Clay	Red	6	0	53	11
Sandstone	Red	2	2	56	1
Clay	Red	4	1	60	2
Shale and sandstone	Red alternate bands	5	6	65	8
	No. 2 Hole.				
Surface	Soil and Gravel	10			
Limestone	Grey	13	9	23	9
Shale & sandstone	Red alternate bands	6	4	30	1
	No. 3 Hole.				
Surface	Clay	8	0		
Limestone	Grey	1	2	9	2
Shale	Red	1	4	10	6
Shale & limestone	Red and grey alternate bands		8	11	2
Limestone	Grey	7	3	18	5
Shale & limestone	Red alternate bands	12	7	31	0
	No. 4 Hole.				
Surface		8	0		
Shale & sandstone	Red alternate bands	8	3	16	3
Sandstone	Grey	1	9	18	0
Limestone	Grey	3	3	21	3
Shale and clay	Light red	3	3	24	6
Limestone	Grey	6	6	31	0
Sandstone and Shale	Light red alternate bands	3	0	34	0
Limestone	Grey	5	8	39	8
Sandstone and Shale	Red alternate bands	4	10	44	6
	No. 5. Hole.				
Surface	Clay red	6	6		
Limestone	Grey	7	6	14	0
Limestone and Shale	Grey alternate bands	2	2	16	2
Limestone and Clay	Sandstone grey, clay blue	3	4	19	6
Limestone and Clay	Clay red and blue	9	6	29	0

Name of Rock	Color and Other General Characteristics.	Thickness Bored		Total Depth	
		Feet	In.	Feet	In.
Limestone ...	Grey	2	6	31	6
Clay	Dark blue	....	4	31	10
Shale	Red and blue	1	10	33	8
Limestone and Conglomerate	Grey	3	....	36	8
	No. 6 Hole.				
Surface	Clay and gravel	4	....	....	....
Limestone ...	Grey	2	4	6	4
Clay	Light grey	....	8	6	10
Clay and limestone	Alternate bands	18	10	25	8
Shale	Dark blue	....	6	26	2
Limestone ...	Grey	2	4	28	6
Sandstone ...	Grey	1	....	29	6
Limestone ...	Grey	....	6	30	....
Clay and shale	Red and blue	1	7	31	7
Limestone ...	Grey	3	2	34	9
Sandstone and Conglomerate	Grey	1	3	36	0

These holes cost, $500.64 or $2.05 per foot made up as follows:

Labor	$ 219	37
Management	130	00
Freight and truckage	12	22
Light, oil, waste, etc		55
Casing-pipe	15	50
Carbon wear	123	00
Total	$ 500	64

Drill No. 3.

PORT MORIEN, C. B.—One hole.

Location.—Mill Brook, Port Morien, C. B.

Hole put down.—For North Atlantic Collieries Company.

Mineral sought.—Coal.

Fastest rate of boring.—One foot three inches in one hour.

Average rate of boring—.74 of a foot per hour.

Commenced hole, July 22nd, finished boring August 12, 1908

Boring single shift.

NAME OF ROCK.	COLOR AND OTHER GENERAL CHARACTERISTICS.	THICKNESS BORED.		TOTAL DEPTH.	
		Feet	In.	Feet	In.
Sandstone and Shale.....	Brown and blue.....	4	....	....	...
Shale.....	Blue.....	5	....	9	0
Shale.....	Grey.....	7	....	16	0
Sandstone...	Grey soft.....	2	....	18	0
Shale.....	Brown and grey.....	10	....	28	0
Shale.....	Grey and blue.....	10	....	38	0
Shale.....	Brown and blue.....	31	....	59	0
Shale.....	Brown and blue with clay bands	12	....	81	0
Shale.....	Brown and blue very hard....	15	....	96	0
Sandstone and Shale.....	Grey and blue.....	8	....	104	0
Sandstone and Shale.....	Grey and blue sandstone very hard.....	20	9	124	9
Coal.....	.....	9	9	134	6

This hole cost, $254.12 or $1.90 per foot made up as follows:

Labor.....	$ 106 85
Management.....	50 00
Light, oil, waste, etc.....	43
Carbon wear.....	61 00
Freight, truckage, small repairs, etc.	35 84
Total.....	$ 254 12

Drill No. 5.

Steam calyx producing 6 inch core. Lower River Inhabitants Basin.

RICHMOND COUNTY, C. B. (2 holes)

Number 1 HOLE.

Location.—Lower River Inhabitants, near the bank of a small brook 3000 feet south east from bore hole put down by No. 1 drill in 1906 and 1600 feet north east from crossing where Richmond Railway crosses the road running from Mines Road Station to Lower River Inhabitants and 500 feet north of this road.

Hole put down for Canadian Consolidated Coal Co.

Mineral sought,—Coal, dip of strata 60 degrees easterly.

Fastest rate of boring,—6 feet 6 inch in one hour.

Average rate of boring,—2,333 feet per hour.

Commenced boring, February 27, finished hole April 13, 1908.

Boring double shift.

NAME OF ROCK.	COLOR AND OTHER GENERAL CHARACTERISTICS.	THICKNESS BORED.		TOTAL DEPTH.	
		Feet	In.	Feet	In.
Surface.....	Clay and boulders.....	12	0	12	0
Shale.....	Red and grey.....	8	0	20	0
Shale.....	Mixed with gypsum.....	8	0	28	0
Claystone and Marl.....	Chocolate red claystone grey marl with veins of fibrous gypsum.....	61	0	89	0
Marl or limestone.....	Grey with gypsan.....	38	5	129	5
Claystone.. ..	Dark grey fine grained with veins of fibrous gypsum....	10	0	139	5
Claystone.. ..	Chocolate red mottled with bluish grey.....	35	0	174	5

Name of Rock.	Color and other Genenal Characteristics.	Thickness Bored.		Total Depth.	
		Feet	In.	Feet	In.
Shale and argillaceous	Sandstone bluish grey and light grey banded	25	2	199	7
Clay stone	Brown	8	0	207	7
Sandstone and Shale	Grey and bluish grey	9	0	216	7
Claystone	Chocolate red mottled with bluish grey with veins of fibrous gypsum	3	0	219	7
Claystone or Shale	Chocolate red mottled with bluish grey, slickensided	11	0	230	7
Sandstone and Shale	Grey	15	0	245	7
Claystone	Reddish brown hard with a few bluish grey mottlings	48	2	293	9
Sandstone	Argillaceous grey	44	0	337	9
Shale	Arenaceous, greenish grey	30	0	367	9
Claystone	Red brown mottled with grey, slickensided	56	9	424	6

This hole cost, $551.40 or $1.30 per foot, made up as follows:—

Labor including freight & truckage	$ 294	40
Management	150	00
Coal	35	00
Light, oil, waste, etc	6	00
Shot	18	00
Gravel	3	00
Lumber	45	00
Total	$ 551	40

Number 2 Hole.

Location.—Lower River Inhabitants, Richmond County, C. B. near the bank of a small brook 250 feet south of the west corner of M. Clark's house.

Mineral sought.—Coal, dip of strata 65 degrees, easterly.

Fastest rate of boring.—5 feet 9 inches in one hour.

Average rate of boring.—One foot per hour.

Commenced boring May 20th, finished boring May 30, 1908.

Boring double shift.

Name of Rock.	Color and other General Characteristics.	Thickness Bored.		Total Depth.	
		Feet	In.	Feet	In.
Surface.....	Clay red.....	19	.....	19	.....
Shale....	Blue	30	0	49	0
Sandstone and Shale	Grey and blue.....	87	1	136	1
Shale and Sandstone	Principally shale, blue and grey	72	5	208	6

This hole cost, $205.35 or $ .99 per foot, made up as follows:

Labor (including freight, truckage)	$	127 35
Management.....		33 00
Fuel.....		15 00
Light, oil, waste, etc.....		2 00
Shot.....		10 00
Gravel.....		1 00
Lumber.....		12 00
Casing.....		5 00
Total.....		205 35

Number 3 Hole.

Location.—Mines Road, Richmond County, 20 feet from the bank of Little River, 234 feet north 35 feet east, from bore hole put down by Number one drill in 1906.

Mineral sought.—Coal, dip of strata 45 degrees east.

Fastest rate of boring.—8 feet in one hour with cutters.

Average rate of boring—.9 of a foot per hour.

Hole commenced June 4th, and finished June 27th, 1908.

Boring double shift.

Name of Rock	Color and Other General Characteristics.	Thickness Bored		Total Depth	
		Feet	In.	Feet	In.
Surface.	Clay and boulders.....	9	0	9	0
Clay.....	Grey.....	3	0	12	0
Shale....	With dirty coal.....	5	0	17	0
Clay.....	Grey.....	10	0	27	0
Coal & Shale.	Black shale mixed with coal...	6	0	33	0
Shale....	Grey thick bedded with plant remains.....	11	0	44	0
Ironstone.....	Brown.....	1	0	45	0
Sandstone. ...	Grey.....	1	6	46	6
Claystone....	Dark grey mottled with brown	12	6	59	0
Claystone....	Red and blue.....	2	0	61	0
Claystone.....	Red and grey.....	26	0	87	0
Claystone....	Chocolate red.....	2	0	89	0
Claystone....	Red.....	25	6	114	6
Claystone.....	Red and blue.....	5	6	120	0
Shale....	Dark grey with calinite leaves	1	6	121	6
Sandstone. ...	Grey.....	11	4	132	10
Sandstone. ...	Chocolate red and grey.....	27	2	160	0
Sandstone. ...	Light grey with plant remains.	7	0	167	0
Shale & Coal.	Black with a little coal.....	3	0	170	0
Shale....	Blue grey.....	4	0	174	0
Sandstone. ...	Grey and chocolate red.....	23	0	197	0

Name of Rock	Color and Other General Characteristics.	Thickness Bored		Total Depth	
		Feet	In.	Feet	In.
Shale	Black	....	6	197	6
Sandstone	Chocolate-red and blue-grey	4	6	202	0
Shale	Chocolate-red and blue-grey	10	0	212	0
Shale	Black	.....	6	212	6
Shale	Chocolate-red and blue-grey	17	6	230	0
Shale and Sandstone	Chocolate-red and blue-grey	12	0	242	0
Sandstone	Chocolate-red	37	0	279	0
Shale	Chocolate-red	12	0	291	0
Shale	Chocolate-red and blue grey	13	0	304	0
Shale & Coal	Black	1	0	305	0
Sandstone	Chocolate-red, argillaceous	5	0	310	0
Shale	Chocolate-red and blue-grey	15	0	325	0
Sandstone	Chocolate-red and grey	5	9	330	9
Conglomerate	Chocolate-red, pea size	2	0	332	9
Shale	Chocolate-red and blue-grey slickensided	2	0	334	9
Sandstone	Chocolate-red	11	0	345	9
Sandstone and Shale	Chocolate-red and blue-grey	21	3	367	0

This hole cost, $414.40 or $1.13 per foot made up as follows:

Labor including freight and truckage	$ 271 90
Management	75 00
Fuel	21 00
Light, oil, waste, etc	5 00
Shot	27 00
Lumber	8 00
Shot-bits	6 50
Total	$ 414 40

Number 4 Hole.

Location.—Mines Road, Richmond County, 2300 feet north 70 degrees east from number three hole put down by number 5 drill.

Mineral sought.—Coal, dip of strata 37 degrees, 50 degrees south of east.

Fastest rate of boring.—8 feet in one hour with shot.

Average rate of boring.—1.2 feet per hour.

Hole commenced, July 8 and finished July 29, 1908.

Boring double shift.

Name of Rock.	Color and other General Characteristics.	Thickness Bored.		Total Depth.	
		Feet	In.	Feet	In.
Surface	Clay and boulders.....	9	6	9	0
Shale....	Dark blue and greenish grey...	29	0	38	6
Shale and Sandstone .	Bluish grey shale, grey sandstone	23	0	61	6
Sandstone. ...	Greenish grey.....	6	9	67	6
Shale....	Blue-grey with ironstone	46	0	114	3
Sandstone. ...	Greenish-grey	8	6	122	3
Shale.	Blue-grey	2	0	124	9
Sandstone	Greenish-grey	5	0	129	9
Shale.....	Dark blue and green.....	9	0	138	9
Sandstone. ...	Chocolate-red, blue and greenish grey	29	0	167	9
Shale..... ...	Bluish-grey.....	5	0	172	9
Sandstone. ...	Chocolate-red and grey.	86	8	259	0
Shale or Clay.	Blue-grey	13	0	272	0
Sandstone. ...	Chocolate-red and grey.....	11	0	283	0
Shale....	Blue-Grey.....	7	0	290	0
Sandstone. ...	Chocolate-red with grey mottlings	8	6	298	5
Shale or Claystone....	Chocolate-red and blue-grey....	17	6	316	0
Shale and Sandstone. ...	Bluish and grey.....	2	0	318	0
Shale or Claystone....	Blue grey and chocolate red....	130	0	448	0
Shale.....	Dark-blue-grey with white fibrous gypsum in bedded planes	53	9	501	9

This hole cost, $465,10 or, $0.93 per foot, made up as follows:

Labor, (including truckage).....	$ 251 00
Management.....	72 00
Fuel.....	22 00
Light, oil, waste, etc.....	3 50
Shot.....	15 00
Lumber.....	6 80
Pumping water.....	79 80
Shot-barrels used.....	15 00
Total.....	$ 465 10

Number 5 Hole

On the completion of number 4 hole, the drill was moved and set up alongside of Proctor's Brook (so called) and 1220 feet east of centre of the Cape Breton Railway Co's track, where it crosses MacMillan Creek. At the end of the year, the hole had reached a depth of 572 feet. The record of this hole will be published in next year's report.

Drill No. 6.

Pettigrew Settlement, Cumberland County.

In October 1907 this drill was moved from the site of No. 2 hole, at Newville, put down by the Standard Railway and Coal Co. to No. 1 hole, put down by the Standard Railway and Coal Co. with their churn drill at Pettigrew Settlement, near the west bank of Niggis Brook and about 400 feet from its mouth. This hole was about 1¾ miles in a north west direction from the Newville hole.

Boring commenced on October 22nd at a depth of 2353 feet 9 inches and work was continued until September. During this period 164 feet 4 inches was bored making the hole 2518 feet deep. The strata passed through was conglomerate with a few narrow bands which was probably clay-stone. Much of the core recovered was ground to a coarse sand.

As at Neville, great difficulty was experienced in boring this strata and numerous delays were caused on account of the breaking of parts due to the adverse conditions under which boring was carried on.

As stated in the first part of my report, this hole was lost in August, the drill was then sent to the storehouse at Hantsport.

Drills Nos. 4, and 7.

These two drills did not leave the storehouse during the year.

On the following page will be found a table showing the work of each drill during the past year.

I have the honour to be,

Your obedient servant,

H. B. PICKINGS.

Summary Statement of the Year's Work.

Drill No.	LOCATION.	No. of Holes.	Depth Bored		Depth Bored		Total for Drill.	
			Feet	Ins.	Feet	Ins.	Feet	Ins.
1	Birch Grove, Cape Breton County	1	769	6				
1	" " " " "	2	1170	11	1940	5		
1	New Glasgow, Pictou County	1	14	0			1954	5
2	Merigomish, " "	2	345	2	345	2		
2	New Glasgow " "	1	909	0				
2	" " " "	2	842	0				
2	" " " "	3	646	0				
2	" " " "	4	500	0				
2	" " " "	5	92	6	2989	6	3334	8
3	Woodburn, Pictou County	1	65	8				
3	" "	2	30	1				
3	" "	3	31	0				
3	" "	4	44	6				
3	" "	5	36	8				
3	" "	6	36	0	243	11		
3	Port Morien, Cape Breton County	1	134	6	134	6	378	5
4	Remained at storehouses							
5	Inhabitants Basin, Richmond County	1	424	6				
5	" " " "	2	208	6				
5	" " " "	3	367	0				
5	" " " "	4	501	9				
5	" " " "	5	572	0	2073	9	2073	9
6	Newville, Cumberland County	2	164	4	164	4	164	4
7	Remained at storehouse							
	Total number of feet bored during year						7905	7

Record of strata passed through near Trenton, by Calyx-drill, owned and operated by Isaac McNoughton, producing 2½ inch Core.

Name of Rock.	Color and other General Characteristics.	Thickness Bored.		Total Depth.	
		Feet	In.	Feet	In.
Surface.....	Sand, loame, etc.....	30	.....	.....	.....
Sandstone. ...	Bluish grey.....	7	10	37	10
Shale.....	Blue.....	4	2	42	0
Shale.....	Light grey	14	....	56	0
Sandstone ...	Carbonaceous and micaceous..	32	.....	88	0
Sandstone. ...	Hard, coarse.....	3	.....	91	0
Sandstone. ...	Light grey, micaceous with a few black bands.....	4	.....	95	0
Fireclay.....	....	14	.....	109	0
Sandstone ...	Carbonaceous and micaceous ...	1	.....	110	.....
Shale.....	Grey, arenaceous.....	2	6	112	6
Sandstone ...	Light grey, coarse.....	1	.....	113	6
Sandstone. ...	Blue-grey, coarse with bands of coaly matter.....	2	.....	115	6
Sandstone. ...	Light grey, argellaceous with dark streaks.....	2	.....	117	6
Sandstone ...	Bluish grey with small coaly streaks.....	2	.....	119	6
Sandstone....	Light grey.....	6	.....	125	6
Sandstone....	Light grey, micaceous...	8	6	134	0
Shale.... ..	Light grey.....	3	6	137	6
Sandstone....	Light grey, coarse with small coaly streaks.....	1	6	139	0
Shale.....	Grey.....	1	.....	140	0
Sandstone ...	Bluish grey, micaceous with carbonaceous spiecks.....	16	0	150	0
Drill dropped 3 inches...	Brown washings, fine flow of water.....	0	3	156	3
Limestone.....	Carbonaceous, in thin layers....	1	9	158	0
Sandstone ..	Light grey, micaceous.....	22	0	180	0
Sandstone ...	Light grey, coarse.....	2	0	182	0
Sandstone ...	Ligth grey, micaceous.....	12	3	194	3

RECORD OF STRATA.—(*Continued*).

NAME OF ROCK	COLOR AND OTHER GENERAL CHARACTERISTICS.	THICKNESS BORED		TOTAL DEPTH	
		Feet	In.	Feet	In.
Shale	Light grey	7	9	202	0
Shale	Brown and grey mottled	6	6	208	6
Shale	Reddish brown slickensided	8	9	217	3
Shale	Light grey	3	3	220	6
Shale	Blue grey and brown mottled	3	11	224	5
Shale	Blue and grey, one ft. of each	2	0	226	5
Shale	Bluish grey, arenaceons mottled with brown	6	7	233	0
Shale	Brown, mottled with blue grey	10	6	243	9
Sandstone	Light, blue grey	10	6	254	0
Sandstone	Buffy grey, coarse	7	0	261	0
Sandstone	Bluish grey	4	0	265	0
Shale or Fireclay	Grey	2	4	267	4
Sandstone	Light grey, coarse	4	11	272	3
Clay bedding.		.....	1	272	4
Shale	Light and dark grey, finely banded	4	2	276	6
Sandstone	Light grey with coaly parting.	6	6	283	0
Shale	Grey	4	0	287	0
Shale or clay-stone	Brown	1	0	288	0
Shale	Blue, grey	6	.....	294	0
Shale	Light bluish grey, mottled with brown	3	.....	297	0
Shale	Brown	1	.....	298	0
Shale	Reddish brown	3	0	301	0
Shale	Light grey and pinkish with small carbonaceous spots and nodules	2	5	303	5
Shale	Light grey with dark banding.	4	7	308	0
Shale	Reddish brown	1	6	309	6
Shale	Grey and black, arenaceous	.....	3	309	9
Shale	Yellow and brownish grey	2	3	312	0
Shale	Light grey and brownish mottled, arenaceous	5	0	317	0
Shale	Grey and brown mottled	4	7	321	7
Shale	Reddish brown and grey mottled	12	1	333	8

RECORD OF STRATA.—(*Continued*).

NAME OF ROCK.	COLOR AND OTHER GENERAL CHARACTERISTICS.	THICKNESS BORED.		TOTAL DEPTH.	
		Feet	In.	Feet	In.
Sandstone....	Light grey, fine.....	0	7	334	3
Shale	Light grey and brownish.....	4	2	338	5
Sandstone....	Light grey, fine with carbonaceous blotches.....	.....	5	338	10
Shale..... ...	Grey mottled with brown.....	5	10	344	8
Shale..... ...	Bluish grey, with small white nodules.....	2	2	346	10
Shale..... ...	Grey.....	6	0	355	10
Shale..... ...	Brown.....	1	10	354	8
Shale..... ...	Bluish grey with small white nodules.....	5	9	360	5
Shale..... ...	Reddish brown.....	.....	4	360	9
Shale....	Grey.....	9	3	370	0
Shale....	Brown.....	2	0	372	0
Shale....	Rusty, yellowish brown.....	2	5	374	5
Sandstone....	Light bluish grey, fine grained.	6	0	380	5
Shale.	Blush grey with smail white nodules....	7	9	388	2
Shale.	Brownish red, mottled with grey	3	2	391	4
Shale....	Bluish grey with small white spots.....	8	0	399	4
Shale....	Brownish grey.....	10	1	409	5
Sandstone. ...	Light grey.....	1	10	411	3
Shale	Grey with black bands.....	1	3	412	6
Shale	Light bluish grey with buff colored nodules.....	2	9	415	3
Shale	Brownish grey.....	20	3	435	6
Shale	Brown and bluish mottled, arenaceous.....	1	2	436	8
Shale	Bluish grey.....	2	4	439	0
Sandstone	Light grey, fine, slightly micaceous.....	5	2	444	2
Shale	Reddish brown.....	.....	11	445	1
Shale	Grey with brownish nodules..	6	11	452	0
Shale	Mottled brown.....	4	3	456	3
Sandstone	Light grey, very fine grained..	6	5	462	8
Shale	Brownish grey.....	4	10	467	6
Sandstone	Light grey, fine grained.....	8	8	476	2

RECORD OF STRATA.—(*Continued*).

NAME OF ROCK	COLOR AND OTHER GENERAL CHARACTERISTICS.	THICKNESS BORED		TOTAL DEPTH	
		Feet	In.	Feet	In.
Sandstone	Light grey, fine, grained with black bands	9	0	485	2
Sandstone	Light grey, fine grained, argillaceous	7	10	493	0
Shale	Bluish grey with buff colored nodules	7	0	500	0
Sandstone	Light grey	6	6	506	6
Shale	Grey	6	3	512	9
Sandstone	Grey, slightly micaceous	3	3	516	0
Shale	Grey	1	5	517	5
Sandstone	Light grey	3	5	520	10
No core	Dark washings	.....	6	221	4
Shale	Grey, arenaceous	5	6	526	10
Sandstone	Bluish grey, fine grained	1	9	528	7
Shale	Bluish grey with buff coloured nodules	2	1	530	8
Sandstone	Light grey, fine grained	2	9	533	5
Shale	Grey banded	2	7	536	0
Sandstone	Bluish grey banded	19	0	355	10
Shale	Bluish grey mottled	15	1	570	11
Shale	Rusty coloured, mottled	1	1	572	0
Shale	Bluish and brownish grey mottled	8	9	580	9
Sandstone	Grey	3	0	583	9
Shale	Bluish and dark grey	4	0	587	9
Sandstone	Bluish grey, micaceous	31	6	619	3
Shale and fire-clay	Dark grey with bands of ironstone	6	5	625	8
Shale	Dark grey, banded	5	7	631	3
Sandstone	Dark grey	7	6	638	9
Shale	Bluish black, banded	4	11	643	8
Shale	Very dark, banded	5	10	649	6
Ironstone and shale	Black in bands	4	5	653	11
Sandstone	Light grey	1	0	654	11
Ironstone	.....	....	7	655	6
Shale	Brown	2	3	657	9

RECORD OF STRATA.—(*Continued.*)

NAME OF ROCK.	COLOR AND OTHER GENERAL CHARACTERISTICS.	THICKNESS BORED.		TOTAL DEPTH.	
		Feet	In.	Feet	In.
Sandstone . . .	Grey.....	11	0	668	9
Sandstone . . .	Grey with coaly partings.....	1	6	670	3
Sandstone . . .	Grey	9	8	679	11
Fireclay or shale.	Black.....	....	7	680	6
Shale	Black with plant workings	16	8	697	2
Sandstone . . .	Grey with brown mottlings...	3	6	700	8

Provincial Museum and Science Library.

PROVINCIAL MUSEUM,
Halifax, N. S., 28th January, 1909.

To HIRAM DONKIN, ESQ., M. E.,
Deputy Commissioner of Public Works and Mines:

Sir,—I respectfully present herein a report on the Provincia Museum of Nova Scotia and the Provincial Science Library, for the calendar year 1908.

PROVINCIAL MUSEUM.

Accessions.—In my last report it was stated that owing to absence and work in connection with the Jamestown and Provincial Exhibitions, it had not been possible to bring the list of accessions for 1907 up to date in time for that report. The figures, however, for that year are now given below. Work in connection with the Canadian National Exhibition during the past year has in a similar way prevented the completion of the accession entries for 1908.

During the year 1907 our accession-book shows that 526 specimens were catalogued with all available data, representing 117 accessions. Of these, 201 specimens (8 accessions) were not from Nova Scotia.

The following summary gives the number of additions that have been received during the past eight years:

1900.....	1202	specimens—	133	accessions.
1901.....	2660	"	—546	"
1902.....	2039	"	—816	"
1903.....	1911	"	—744	"
1904.....	742	"	—494	"
1905.....	722	"	—210	"
1906.....	1510	"	—135	"
1907.....	526	"	—117	"
Total: 8 years.....	11,312	"	3195	"

Exhibit of economic minerals at the Canadian National Exhibition, Toronto.—On 9th June directions were given me to prepare an exhibit of our economic minerals for the Canadian National Exhibition, to be held at Toronto, Ont. The permanent exhibition set of samples was revised and large typical samples of coal secured from the more important collieries. The entire exhibit, weighing 30,800 lbs., made one and a half car-loads, and was dispatched from the exhibition siding at Halifax on 18th and 20th August respectively. I left Halifax on the 22nd, and arrived at Toronto on the 23rd, and the following day began to install the exhibit in the large, well-lighted, fireproof building set ide for the various provincial mineral exhibits. The fact that ands had been made at Halifax and forwarded to Toronto in ctions, ready to clamp together, much facilitated work. The hole exhibit was completely installed by the day of the formal pening, 1st Sept. The space assigned to Nova Scotia measured 2 by 20 feet, and the stand itself was 49 feet long by 5 to 8 feet wide. The centre of the exhibit consisted of a gilded obelisk, representing the total amount of gold extracted from the province. In front of this was a steel-cage with very rich specimens of gold ore. On either side were eight large pyramids of coal, and flanking these was arranged the general collection of minerals, systematically arranged on the stepped stands. All the samples were duly labelled with name, locality, owner's name, etc., and a printed catalogue with fuller particulars of the various specimens and deposits accompanied them for general distribution. The stands were finished in white enamel with gold beadings, and gold and white drapings were also used. A large sign surmounted the whole exhibit.

The very rich gold exhibit of about 90 specimens was an excellent one and embraced the specimens from Gold River, Montagu and South Uniacke, belonging to the Museum, together with some from Brookfield, borrowed from A. M. King, of Annapolis Royal. This was the richest exhibit of free-milling gold ore shown at the exhibition, and it attracted great attention and favorable comment, both from the many mining men who saw it and the public generally. A special guard was maintained on this exhibit day and night. A separate case of gold ore was also shown by the Ragged Falls Mining Co.

Our exhibit as a whole, I am pleased to state, won much praise on all sides, both for the diversity and quality of the samples

shown, and for the general appearance of the installation. Among those who examined the exhibit were the British and foreign mining and metallurgical engineers who were touring Canada as the guests of the Canadian Mining Institute, and also notable mining men and investors of Canada.

I was present throughout the exhibition and gave such information as was required regarding our mineral and other resources. A large edition of the 62-page descriptive catalogue of the collection was distributed free, together with our mines reports, etc.

The exhibit as a whole included about 191 samples, consisting of many more separate specimens, representing typical examples of our coal, gold, auriferous antimony, graphite, copper ores, lead ore, tin ore, iron ores, tungsten ores, manganese ores, fluorite, gypsum, anhrydrite, limestone and marble, dolomite, barite, diatomaceous earth, talc, pyrophyllite, petroleum, building stones, grindstones, cement, clay and bricks, fire-clay, moulding-sand roofing-slate. The samples of scheelite from the new discovery of that mineral at Moose River, to which reference will be made on a subsequent page, drew particular attention, and very many inquiries were made regarding the deposit from which it came.

I have much pleasure in stating that our exhibit was awarded two gold medals, one for the exhibit as a whole, as a collection of economic minerals of the province, and the other for the exhibit of free-milling gold ores.

Every courtesy and assistance was rendered by Dr. J. O. Orr, the manager of the exhibition, and the exhibition association also bore a large proportion of the cost of transportation.

The exhibit was prominently situated in the new fire-proof horticultural and provinces building, which was set aside as a mines building; and there is no doubt that it did much to advertise the resources of our province in the central section of Canada and to draw attention to our mineral deposits as a field for the investment of capital, which lately has largely been going to the Cobalt district.

Other provinces whose governments made special exhibits, were: Ontario, Quebec, New Brunswick, Alberta and Saskatchewan.

The exhibition closed on 12th September, having had an exceedingly large attendance. On 16th September our exhibit was shipped back to Halifax, where it was returned to our mines building, and on the 19th I left Toronto.

Economic minerals at Provincial Exhibition.—The exhibit in the mines building at the Provincial Exhibition was probably not quite as extensive as in other years, as the exhibition took place from 2nd to 10 September, during the time our mineral exhibit was at the National Exhibition, Toronto. Samples, however, to fill up the vacancies were temporarily transferred from the Provincial Museum and the building in this way filled. In my absence, Mr. T. Holloway, chief messenger of the Provincial Building, took charge of the building.

Among interesting new exhibits were the following:

Scheelite (calcium tungstate), from Moose River gold district, Halifax Co., shown by A. L. McCallum and others, to which reference is made elsewhere.

Chalcopyrite in siderite, from Lake Copper Mining Co., Copper (Polson's) Lake, Antigonish Co.

Auferous stibnite, from Canadian Antimony Co., Lake George, N. B., exhibited by Paton's General Agency, Halifax.

Charcoal manufactured by the Standard Chemical Co., of Toronto; exhibited by Hugh D. MacKenzie Co., agents, Halifax.

Gold amalgamator, manufactured by the Amalgamator Manufacturing and Mining Co., 812 Tremont St., Boston, Mass. (Austen Bros., agents, Halifax.)

John Kline, of Halifax, showed new samples in his creditable exhibit of sawn, cut and polished granite; and J. W. Cumming, of New Glasgow, again exhibited a fine set of superior coal-miners' tools of his own manufacture. His firm is the only manufacturer of such articles in the province, and it is an industry which should grown in the future. We regret to hear that Mr. Cumming has since died.

Owing to the absence of gold samples at Toronto, the exhibit of that mineral was confined to low-grade ore.

Through some misunderstanding, the exhibition management failed to appoint judges to examine the exhibits in the mines building, and consequently no awards were made at the time, which created some dissatisfaction. The skylights or roof of the building were found to leak very badly, in fact had been leaking for some years, and the commission finally had some much needed repairs made, but not before much damage had been done to expensive iron and steel forgings.

At the close of the exhibition the exhibits were covered as usual.

Scheelite at Moose River, Halifax Co.—In the autumn of 1907, Messrs. Reynolds and Currie, of Moose River, Halifax Co., discovered a quartz boulder containing a yellow mineral, but it was not till early in the summer of 1908 that this was determined by A. L. McCallum, of Halifax, and Dr. T. L. Walker, of Toronto, to be tungstite. Prospecting was immediately begun and other similar boulders discovered. The property was then taken up under a prospecing license by J. A. Reynolds and W. S. Currie, of Moose River, and Mr. McCallum, of Halifax.

Two weeks after prospecting had been begun, the ore-bearing quartz vein from which the boulders had been derived, had been located and opened up in several places, being traced east and west for some distance. The vein is interbedded in a slate belt 3½ feet wide, between quartzite walls, dipping north at 75 degrees. The ore which is here scheelite, is situated on the foot-wall and occurs in lenses from 7 inches down, averaging about 3 inches. Some mispeckel (arsenopyrite) was also generally present. An average sample of this ore as admixed with the quartz gangue yielded Mr. McCallum the following result on analysis:

Silica	29.29
Tungstic acid (WO_3)	44.10
Lime	12.70
Arsenic	3.43
Sulphur	1.46
Oxide of iron and aluminia	7.70
	98.68

Some lenses of pure scheelite gave the following analysis:

Tungstic acid	79.84
Lime	20.11
	99.95
Specific gravity	6.10

South of this original vein four others were soon after located, their strike being the same as the first one, and in harmony with the other interbedded veins of the district. Two of these were about the same width and quality as the first, and the other two were from 12 to 14 inches, but of lower grade, the scheelite occurring on the outside of the vein. Still other ore-bearing veins, making in all about 14, were subsequently discovered, some of which on further investigation will no doubt prove to be continuations of some of the others. It is expected that next season the extent of these very interesting deposits will be thoroughly explored.* An account of the discovery, by Mr. McCallum, will be found in the *Canadian Mining Journal* of 15th September, 1908, and he has also had a paper on the subject before the N. S. Institute of Science, which will appear in vol. 12, part 2, of its *Transactions*.

The samples from this deposit, which I had with our exhibit at Toronto, attracted the very greatest attention of mining and metallurgical men; and those shown at the Halifax exhibition also brought the find prominently before our own people. Numerous letters have also since been received, asking for information regarding the discovery.

Copper ore at Polson Lake, Antigonish Co.—A report having appeared in the newspapers that ten inches of metallic copper had been discovered at the mine of the Lake Copper Mining Co., Ltd., at Polson Lake, Antigonish Co., by direction of the department I left for there on 16th July, 1908, to make an examination. George F. Ross is mine manager, and Frank Monroe, foreman, and at the time of my visit 8 men were employed. This company, which is a new one, started on 11th

*It may be noted that in December, 1908, another promising deposit of scheelite was located on the east side of Perry Lake, West Waverley, Halifax Co., in which Mr. McCallum is also interested.

May, 1908, to re-open this well-known property, which had been idle for some years. The shaft-house had been repaired, a blacksmith-shop built, and boiler erected, besides which an office and store-room 12 x 20 feet, and a cook-house, 20 x 36 feet, had been erected, the collar-shaft timbered, a new ladder-way put in and a division inserted between it and the hoisting-way, some necessary re-timbering attended to, and a water-supply pipe laid 415 feet to the lake. The company at this time was engaged in sinking the main slope, and the mine was being kept unwatered by bailing, although a pump was to be installed immediately. The shaft-house is situated on a small hill, 66 feet above the level of Polson Lake, the shore of which is 415 feet to the west.

The slope, which follows the vein, dips to the north, first at an angle of 60 degrees, which at 100 feet in the slope changes to 35 degrees. This change in dip may be merely local. At the time of my visit the slope was down 110 feet on the incline, but I understand that this has since been sunk to 122 feet.

There are two levels; one east 125 feet at a depth of 25 feet on the incline, and the other west about 100 feet at a depth of 50 feet. From the east level there is an air-shaft to the surface, and also two short exploratory cross-cuts, one driven about 15 feet south in dark blue slate or shale, dipping north at a high angle, and the other about 20 feet, the latter ending in light-grey, fine-grained shale or slate, dipping north at about 10 degrees to 15 degrees. In the west (lower) level is a third exploratory cross-cut driven north some feet, but the end was filled up with a fall of the crushed, brecciated hanging-wall.

The foot-wall is a dark blue Devonian slate or shale, agreeing in dip with the dip of the vein, and in harmony with the general dip of the rocks of the district. The hanging-wall consists of a light-grey, soft, uncemented, crushed fault-breccia, beyond which the rock is a light-grey, fine-grained slate or shale, gently dipping north at an angle of 10 degrees to 15 degrees. This is seen best in the north cross-cut of the east level. The vein consists of siderite (carbonite of iron) carrying variable percentages of chalcopyrite and pyrite, and some pyrrhotite is reported also to occur. At the bottom of the slope the vein is about 7 feet wide, but then seems to be narrowing a little by the approach of the dark-blue rock of the foot-well. There is also present here some rather large "horses" of dark-blue rock from the wall. The aver-

age thickness of the siderite, ore-bearing vein, is perhaps about 5½ feet, but at once place it is said to be 11 feet thick, while at the end of the east level it pinches to about a foot or so, although this pinch is liable to be merely local.

There can be no doubt that the vein occurs in a fault-fissure, the hanging-wall being the down-throw side. The strike of the vein is approximately east and west (true bearings), although the contour of the surface will swing the outcrop of the vein around more to the northward as it descends to the shore of the lake. There I think the same vein is encountered in an old pit close to the road.

At the bottom of the slope the ore is at present not so rich as in the levels above. On the hanging-wall at this place I found about 10 inches in thickness of light-grey slaty material, dipping with the vein, which seemed to have been somewnat altered by intrusive matter, and beyond it is the soft, light-grey, brecciated material before mentioned. In the 10 inches of rock referred to, immediately overlying the siderite vein, I found, on close examination, a very few very minute beads of native copper and some small obscure coatings which may be the same mineral. But no more could be found on careful search. In this particular rock the sulphide had been mostly leached out, leaving crystal cavities. The presence of this extremely small amount of native copper is in itself at present, therefore, of no commercial importance whatever, but it is of interest as probably indicating the proximity of igneous intrusions, and a nearing to the igneous mass which is situated a short distance to the north. How the values of the vein will be affected should it, as it doubtless will, eventually come in contact with this igneous rock, it is difficult to predict, but I am inclined to think it should be to their advantage.

The presence of the soft brecciated material on the hanging-wall will make it necessary to pay attention to timbering, and it forms a course for water to be very readily carried down to the bottom of the slope. It is quite probable that much of the water dumped on the surface was finding its way down to the slope again by this means. The water should be carried well clear of the workings.

The operations of the former companies that had worked here were not as extensive as had been expected, the amount of stoping

done being but little, and the present levels block out a considerable body of ore which could be won in the near future.

The long haul of fifteen miles to railway transportation is a matter to be reckoned with, and the ore will probably have to be concentrated at the mine before shipping.

The following assays are from the company's literature:

	Copper.	Gold.
East level	4.66 per cent.	0.025 oz.
North side shaft	8.66	0.120 oz.
East of shaft	7.50	
West of shaft	3.30	
West level	2.00	
West level	0.20	
Average	4.36 per cent.	

The following assays, also from the company's prospectus, were made by Henry Bath & Son, Swansea, England:

	Copper	Sulphur	Nickel
No. 1	Nil	3.60 per cent.	Nil.
No. 2	9.95 per cent.	12.05	"
No. 3	8.78	44.00	"
No. 4	Trace	33.51	Trace
No. 5	17.15	23.77	Nil.
No. 6	9.71	32.84	Trace
Average	4.60 per cent.	24.96 per cent.	

Minerals and fossils in museum.—Among interesting additions to our mineral collection may be mentioned the following: Tungstite in quartz (drift), scheelite in quartz, and twinned crystals of arsenopyrite in slate, all from Moose River gold district, Halifax Co., presented by A. L. McCallum; cassiterite (tin ore) with chalcopyrite, etc., from a dyke in granite, found late in 1907, by Ernest Turner, on the farm of Henry Winston, near the head of Mill Road, close to Camp Lake, 3¼ miles due north of New Ross, Lunenburg Co., presented by Dr. H. W. Cain; gold in biotite, from Dolliver's Mountain mine, Isaac's Harbor,

Guysboro Co., presented by C. F. Andrews; fine specimens of natrolite from the trap of North Mountain Kings Co., from J. L. Phinney, and 29 miscellaneous mineral specimens of interest, mostly new to our collections, presented by Dr. T. L. Walker, of the department of mineralogy of Toronto University. Charles J. Coll, manager of the Acadia Coal Co., Stellarton, presented a section of a large fossil tree-trunk discovered at Albion Mines.

Mammals.—Among the additions in this department is the skull of a cetacean, the Black Fish (*Globicephalus melas*), which was found at Spry Bay, Halifax Co., on 3rd June, 1908, by Edward Henneberry, of Gerrard's Island, Spry Bay, and presented by Henry McKenzie of that place.

Birds.—A rare specimen received was a Tennessee Warbler (*Helminthophila peregrina*), adult male, taken at Marlborough Woods, Halifax, on 6th June, 1908, by L. A. Purcell.

Fish.—The only addition of note was a Golden Shiner (*Abramis crysoleucas*) taken at Antigonish, N. S., and forwarded by Dr. W. H. Macdonald of that place.

Bactrachians.—A rare Red-backed Eft (*Plethodon erythronotus*), taken at Prince Arthur's Park, Dartmouth, Halifax Co., on 23rd April, 1908, was presented by Mrs. Joseph Harris.

Insects.—Owing to the lack of a cabinet in which to properly arrange and preserve it, our collection of lepidoptera, which is a fairly large one, is not available for reference or study, except in exceptional instances, being stored in boxes in which it is liable to injury in various ways.

Miscellaneous.—Among miscellaneous specimens added during the year, are an embroidered Micmac woman's silk jacket (*mar-de-lit*), a form of costume formerly common among the tribe, but now rarely seen; casts of a large silver medal, dated 1814, presented by George III to the Micmac chief of that period, and now in the possession of Chief John Noel, and a photograph of a large gilt medallion presented by the Pope to the Micmac chief; and a birch-bark powder canister, such as was used in the tribe years ago. An interesting relic of early days is a leather fire-bucket of the once well-known Hand-in-Hand Fire

Company of Halifax, the bucket bearing the name of its former possessor, John C. Halliburton.

Examination of bore-hole cores.—By direction of the Mines Department, I have during the year examined the samples of rock-cores forwarded by the various government drills operating throughout the province, and have compared the same with the drill-runner's logs, and made such corrections thereto as seemed to be desirable.

Proposed removal of the museum to the Technical College.—The new government Technical College being erected on Spring Garden Road, contains two rooms, respectively 48 x 41 feet and 40 by 23 feet, on the first floor, to which it is proposed to remove the museum on the completion of that building. The present quarters have become entirely inadequate to contain the constantly growing collections, and lately there has been no room available to display new specimens or even to store them properly.

Public records.—As usual a good deal of time has been devoted to assisting persons in making searches in the public records of the province, for legal, historic and genealogical purposes. Extensive transcripts of American cases in the records of the vice-admiralty court of Nova Scotia, preserved among our documents, have been made for Mr. Dow, secretary of the Essex Institute of Salem, Mass., and are now being published in the historical collections of that society. They contain much original information relative to privateering on this coast and neighboring waters.

I am glad to state that the erection of a fire-proof vault for the accommodation of these invaluable state records, in the basement of the Technical College, will at length place the most of these very important documents in a place of safety and the remainder will be stored in another room there which will be almost fire-proof.

Donors.—The following is a list of donors to the Museum for the year 1907, which was not ready for the last report. The accession-book entries for 1908 being not yet completed, the list of donors for the latter year will be given in the next report.

Acadia Coal Co., Ltd., Stellarton; Allen (E.C.), Yarmouth; Amero (H.H.), Lower East Pubnico.

Bayne (A. R.), Five Islands; Bell (Frank C.), Sydney; Bishop (E. E.), Halifax; Borden (H. L.), Inverness; Boutilier, (R. S.), Sable Island.

Deppe (W. P.), Mabou Mines.

Ferrier (W. F.) Montpelier, Idaho, U. S. A.

Gates (Simeon), Three-fathom Harbor; Graham (J. J.), Windsor; Great Northern Mining Co., Eastern Harbor.

Harris (Mrs. Joseph), Dartmouth; Hervey (R. G.), Shelburne; Hill (T. Vardy), Halifax.

Jack (Andrew M.), Halifax.

Kiddy (Charles), Lake Ramsay.

Londonderry Iron and Mining Co., Londonderry.

McCallum (A. L.), Halifax; McGillivray (Colin F.), Halifax; McLachlan (R. W.), Montreal; Mines Department of N. S., Halifax; Moriarty (Patrick), Halifax; Murdock (Wm. J.), Gore.

Newly (Wm.), Torbrook West; Nicholson (H. and R.), Barachois Harbor; Noel (Chief John), Shubenacadie.

Parsons (W. F. C.), Londonderry; Perrin (Joseph), McNab's Island; Pickings (H. B.), Halifax; Poole (Dr. Henry S.), Halifax; Pryor (Miss), Bedford; Purcell (L. A.), Halifax.

Reyno (Councillor James V.), Herring Cove; Richards, (Thos. J.), Dartmouth.

Stearns (H. L.), Halifax.

Tufts (Robie W.), Wolfville.

Vidito (J. W.), Dartmouth.

Weatherbe (D'Arcy), Halifax.

SCIENCE LIBRARY.

Accessions.—The total number of books and pamphlets received by the library from all sources during the calendar year 1908, was 3761. Of these 1697 were received through the Nova Scotian Institute of Science; 396 were non-society periodicals (mostly received through the Mines Department); 50 were miscellaneous transfers (from the Mines Department); 49 were transfers from the Legislative Library; none were purchases; 14 were now parts of the *International Catalogue of Scientific Literature;* and 1555 were donations.

The following summary gives the number of accessions that have been received during the past five years. Figures are not available for previous years:

Year 1904.....	3115	books and	pamphlets	received
" 1905.....	2590	"	"	"
" 1906.....	2835	"	"	"
" 1907.....	2510	"	"	"
" 1908.....	3761	"	"	"
Total, 5 years..	14,811	"	"	"

Donations.—Dr. A. H. MacKay, Superintendent of Education, has contributed a number of journals, viz., *Nature, Scientific American and Supplement, American Naturalist, American Geologist, Auk,* and *Ornithologist,* making in all 63 bound volumes and 1491 parts.

Books borrowed.—During the year, 381 books and pamphlets were borrowed, in addition to the many that were consulted in the library. A number of these were loaned to readers in various parts of the province, a practice which we trust will increase. The following is a summary of the number of books borrowed since the opening of the institution:

Year 1901.....	158	books and pamphlets	borrowed.
" 1902.....	163	"	"
" 1903.....	296	"	"
" 1904.....	519	"	"
" 1905.....	539	"	"
" 1906.....	661	"	"
" 1907.....	607	"	"
" 1908.....	381	"	"
Total, 8 years.....	3324	"	"

This decrease in the number of books borrowed is probably caused by the fact that we have lately been unable to purchase new manuals and other general works, there being no grant available for the purpose. In this way we have been unable to keep abreast of the times, for changes are rapid in the subject-matter of scientific and technical books. In 1905 the grant before received by the library was withdrawn, but in 1906 we were authorized to purchase books to the value of $200, and since then we have again been without any funds. The statistics as to borrowers seem to show the effects of this. A printed catalogue, no doubt, would do much to increase the number of users of the library, as persons could then more readily ascertain what the library has on any subject. At the present time the only catalogue is the card one, which is only available, of course, at the library.

Number of volumes in the library.—For the first time a count has been made of the number of books and pamphlets in the library, representing its state in this respect on 31st December, 1908. According to this count the total number of books and pamphlets in the Science Library is 36,784. Of these, the number of books and pamphlets in the science library proper is 7,951; and the number of books and pamphlets belonging to the Nova Scotian Institute of Science is 28,833. The ultimate binding of periodical parts at present in pamphlet form, would of course reduce these numbers.

These figures show that this library is numerically the largest library at present in Nova Scotia. The one which approaches nearest to it numerically is the Legislative Library of Nova Scotia, which at the end of 1907 consisted of 16,595 bound volumes and about 9,715 pamphlets, to which has been added the Akins library of about 3,000 books and pamphlets, making a total of about

29,310 books and pamphlets. The following figures are given in the education report for 1902, being compiled from statistics furnished by the libraries named:

Halifax Libraries.

Citizens' Free Library	24,000	vols.
Legislative Library	13,000	"
	9,000	pamp
Akins' Historical Library (now added to preceding)	3,000	vols.
Military Library	10,000	"
Dalhousie Arts and Science Library	11,000	"
	3,800	pamp
Dalhousie Law Library	6,550	vols.
Presbyterian College Library	11,000	"
Cogswell (medical) Library	2,000	"
Nova Scotia Barristers Society Library	5,458	"
Education Office Library	1,600	"
County Academy Library	1,200	"

Libraries elsewhere in the Province.

King's College Library, Windsor	12,000	"
Acadia College Library, Wolfville	13,000	"
Milton Library, Yarmouth	30 mo. mag, 2,400	"
County Academy Library, Yarmouth	1,291	"
Provincial Normal School Library, Truro	1,850	"
County Academy Library, Pictou	1,250	"
St. Francis Xavier's College Library, Antigonish	7,000	"
Sydney Public Library, Sydney	1,000	"
Baddeck Public Library, Baddeck	2,500	"

No books purchased.—No books were purchased during the past year, as there were no funds available for the purpose, the annual allowance of $500, which had been given for library expenses up to 1904 having been withdrawn, as before referred to. It has therefore been impossible to add any manuals and other general works to the library, the additions being, as we have seen mainly society publications received through the Institute of Science. The very urgent need of a grant for books and other expenses, is a matter that I have dealt with fully in previous reports.

Binding.—No binding has been done for three years, and but a small amount previous to that, so that the question of binding volumes of journals, etc., to preserve them and make them more available for consultation, is one that will have to be grappled with.

Proposed removal of the library.—It is proposed to move the Science Library to the new Technical College on Spring Garden Road, on the completion of that building next summer. A stack-room has been provided, on the second floor, 48 x 41 ft., in size, with a small adjoining reading-room. When conditions demand it, the stack-room is of sufficient height to be floored over midway and so double the capacity.

Periodicals.—The following non-society periodicals have been regularly received and filed:

Canadian Mining Journal (semi-monthly), Toronto.
Coal Trade Journal (weekly), New York.
Colliery Guardian (weekly), London.
Educational Review (monthly), St. John.
Engineering and Mining Journal (weekly), New York.
Industrial Advocate (monthly), Halifax.
Maritime Mining Record (semi-weekly), Stellarton.
Mines and Minerals (monthly), Scranton, Pa.
Mining Journal (weekly), London.
Mining and Scientific Press (weekly), San Francisco.
Nature (weekly), London.

I have the honor to be, Sir,

Your most obedient servant,

HARRY PIERS,
Curator and Librarian.

LIST OF LEASES OTHER THAN GOLD.

Coal.

No. of Lease.	Name of Owner.	County.	Name and Address of Agent of Company.
45/5,46/28,47/29,50/40,51/41, 52/42, 60/54, 61/55 62/56, 63/57, 64/58, 65/59, 66/60, 67/61, 68/62, 69/63, 108, 109, 110, 140, 162, 188, 207, 239, 240, 252, 253, 254, 255, 256, 263, 265, 266, 267, 268, 269, 270, 271, 280, 278, 279, 323, 373, 374, 375, 376, 377, 386, 387, 388, 389, 391, 390, 392, 409, 410, 426, 427, 428, 429, 430	Dominion Coal Co., Ltd.	Cape Breton..	G. H. Duggan,Glace Bay,N.S.
1/2	Cape BretonCoal Mg.Co.Ltd.	Victoria.....	J. T. Burchell.
8/5, 195, 215, 216, 217, 218	Eastern Coal Co., Ltd.....	Cumberland..	Robert Archibald, Maccan,
9/22, 10/23, 11/28, 12/29, 13/30...	Styles Mining Co., Ltd. [et al	Cumberland..	R. C. Fuller, Amherst.
49/53, 42/52	Gen. Sir Alex. Mont. Moore,	Cape Breton..	.....

16/6, 17/7, 18/8, 19/44, 20/52, 21/55, 58, 59, 60, 62, 70, 71, 72, 73, 75, 76, 77, 80, 81, 82, 83, 84, 89, 94, 68, 66, 67, 69, 108, 110, 111, 112, 114, 115, 117, 121, 122, 123, 124, 125, 126, 128, 129, 135, 137, 138, 142, 143, 144, 145, 146, 147, 149, 150, 151, 152, 153, 154, 155, 169, 170, 171, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 196, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230,	Cumberland Railway & Coal Co.	Cumberland..	J. R. Cowans, Springhill.
231, 232, 233, 234.....	Strathcona Coal Co., Ltd...	Cumberland..	F. A. McCully, Moncton, N.S.
211, 212, 213, 225A.....	Port Hood Coal Co., Ltd...	Inverness....	H. A. McLeod, Port Hood, N.S.
1/13, 6/4, 7/10, 19, 20, 26, 29, 30, 111, 112, 113, 150.....	Boston Coal, Mining Co....	Cumberland..	J. R. Needham, Boston, Mass.
24/47, 226A, 227A.....	Inverness Ry. & Coal Co.	Inverness.....	M. S. Beaton, Inverness, N.S.
3/11, 15, 18, 24, 25, 28, 40, 41, 60, 101, 104, 105, 130, 146, 147, 148, 149, 155, 156, 157, 158, 159, 160, 161, 205, 206, 207, 208, 209, 210,			
11/11, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225.....	A. E. Haliburton Gilpin Executor, et al.....	Pictou.....	Charles Fairbanks, Halifax.
58/67, 173, 298, 290, 300, 301, 302, 303, 304, 305, 306, 307, 378, 379, 380.....	Sir Robert L. Weatherbe.	Cape Breton..	....
45, $\frac{1}{16}$.....	Estate B. G. Gray, et al....	Pictou.....	Howard Clark, Halifax.

LIST OF LEASES OTHER THAN GOLD

COAL.—(*Continued*).

No. of Lease.	Name of Owner.	County.	Name and Address of Agent of Company.
26/16	Minudie Coal Co., Ltd	Cumberland	
46, $\frac{5}{6}$	Nova Scotia Steel and Coal Co., Ltd	Picton	Thomas Cantley, N. Glasgow.
111, 164	Sydney Coal Co., Ltd	Cape Breton	A. G. Hamilton, N. Sydney.
112, 113, 114, 115, 118, 141, 177, 213, 244, 283	Cumberland Railway and Coal Co.	Cape Breton	J. R. Cowans, Springhill, N.S.
246	A. G. Hamilton	Cape Breton	
8, 9, 106, 107, 114, 115, 116, 117, 118, 119, 120, 121	Mabou Coal Mining Co. Ltd.	Inverness	J. Johnston, Mabou Mns, N.S.
128, 219	Phœbe Brookeman, et al	Cape Breton	E. W. Moseley, Sydney, N. S.
129, 139	Estate E. T. Mosely	Cape Breton	E. W. Moseley, Sydney, N. S.
130	Samuel C. Bennett	Cape Breton	
117	MacKay Mg. Co., Ltd	Cape Breton	W. A. MacKay, Sydney, N.S.
131, 135, 144, 171, 174, 182, 186, 187, 192, 200, 202, 205, 206, 209, 212, 215, 217, 225, 226, 229, 231, 233, 234, 243, 281, 295, 308, 309, 317, 318, 319, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 186, 187	Cape Breton Coal, Iron Railway Co., Ltd	Cape Breton	McInnes, Mellish & Co., Halifax, N. S.

136, 138, 163, 184, 185, 199, 211, 236, 411	Atlantic Coal Co., Ltd.	Cape Breton.	H. S. Ross, Sydney, N. S.
11	George Dawson, et al	Inverness	
66, 96, 97, 98, 99, $\frac{2}{12}$, $\frac{3}{13}$, $\frac{4}{14}$	Interc'l Coal M'ng. Co., Ltd.	Pictou	James Floyd, Westville, N. S.
146, 193, 194, 216, 235, 312, 313, 314, 315	N. Atlantic Collieries Ltd,	Cape Breton.	Nicholas Richardson, Port Morien.
175	Joseph McDonald	Cape Breton.	
161, 195, 222, 237	T. Routledge, et al	Cape Breton.	W. Routledge, Sydney, N. S.
69, $\frac{7}{4}$ 6 MA, $\frac{8}{21}$, $\frac{9}{23}$	Acadia Coal Co., Ltd	Pictou	C. J. Coll, Stellarton, N. S.
86	John Rutherford	Cumberland.	J. Rutherford, Halifax, N. S.
165, 167, 210, 118, 285	Isle Royale Coal Co., Ltd.	Cape Breton.	R. S. Cottrell, Sydney, N. S.
169, 170, 183, 224, 297	Dom. Coal Co., Ltd	Cape Breton.	G. H. Duggan, Glace Bay.
94A	Great Northern Coal Co. Ltd.	Cumberland.	
5, 36, 47, 48, 49, 50	N. Am. Coal & Dev. Co. Ltd.	Richmond	Geo. E. Johnson, St. Peter's, N. S.
178	William Routledge, et al	Cape Breton.	William Routledge, Reserve Mines, C. B.
179, 180, 190, 208, 223, 284	Frank Roberts et al	Cape Breton.	R. H. Williams, Halifax, N. S.
104, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 176, 213A, 219, 220	Maritime Coal Railway & Power Co., Ltd.	Cumberland.	David Mitchell, Maccan.
32, 33, 34, 42	Thomas A. Wallace	Inverness	
35, 38, 39, 43, 44, 67, 68, 70, 71, 72, 73, 74, 75, 77, 78, 79, 80, 81	E. L. Thorne, Trustee	Inverness	
201, 221	Cornelius Hickey	Cape Breton.	
203	A. J. White	Cape Breton.	

LIST OF LEASES OTHER THAN GOLD.

COAL.—(*Continued.*)

No. of Lease.	Name of Owner.	County.	Name and Address of Agent or Company
83, 84, 85	Estate A. McG. Barton	Pictou	William Roche, Halifax, N.S.
214, 221	George A. Forbes	Cape Breton	.....
125A	George E. Francklyn	Cumberland	.....
11, 31, 33, 37	Richmond Coal Co., Ltd	Richmond	H. M. Pearl, Port Malcolm.
131	T. S. Rogers, et al	Cumberland	.....
7, 8	Dominion Coal Co., Ltd	Victoria	G. H. Duggan, Glace Bay, N S.
248	John McMillan, et al	Cape Breton	.....
134	Emp. Coal & Tram'y Co. Ltd	Cumberland	W. B. Chandler, Moncton, N.B.
63, 64, 65, 96, 97, 98	Ira Taylor	Inverness	.....
66, 108, 109, 154	J. C. Lithgow, et al	Inverness	.....
69	Hector McInnes, et al	Inverness	.....
76	Silas Townsend Estate	Inverness	G. F. S. Townsend, Hfx, N.S.
82, 85, 88	J. W. Andrews	Inverness	.....
83, 84, 86, 87, 89, 90, 91, 62, 93, 94, 95	C. E. Sherman	Inverness	.....
110	Thomas Caldwell, et al	Inverness	T. Caldwell, Halifax, N. S.
34	William Ross, et al	Richmond	.....
35, 43	Dominion Coal Co	Richmond	G. H. Duggan, Glace Bay, N.S.
290	Alexander McDonald	Cape Breton	.....
291	D. A. McCuish, et al	Cape Breton	.....
12	Estate T. K. Jenkins	Colchester	.....

293, 294, 321	M. A. McPherson, et al	Cape Breton	Rev. M. A. McPherson, Little Bras D'or, C. B.
128, 129	National Trust Co., Ltd	Inverness	McInnes, Mellish & Co., Halifax.
140, 141	Chas. A. Brackett	Cumberland	Providence, R. I.
38, 39, 40, 41, 42	Hon. William Ross	Richmond	
142, 219	Thomas F. Tobin	Inverness	
172	Charles J. Stewart	Cumberland	
173	U. J. Weatherbe, et al	Cumberland	
143, 144, 151, 152, 153	Dominion, Coal Co	Inverness	G. H. Duggan, Glace Bay, N.S.
325, 326, 327, 328, 329, 330, 331, 332, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, $\frac{1}{27}$ GMA, $\frac{2}{27}$ GMA, $\frac{3}{8}$ GMA, $\frac{4}{14}$ GMA, $\frac{5}{28}$ GMA, $\frac{6}{29}$ GMA, $\frac{7}{80}$ GMA, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458.	Nova Scotia Steel & Coal Co., Ltd	Cape Breton	Thomas. J. Brown, Sydney Mines, N. S.
221, 228A, 229A, 230A	Bessie M. Hickman	Cumberland	Bessie M. Hickman, Amherst
231	C. B. Coal & Iron Co	Inverness	D. L. McKay, South Lake Ainslie, C. B.
227, 228	W. B. MacDonald	Inverness	W. B. Macdonald, Halifax...
226	John H. Emmett	Inverness	J. H. Emmett, Halifax
222, 223, 225	W. H. Johnson	Inverness	W. H. Johnson, Halifax

LIST OF LEASES OTHER THAN GOLD.

COAL.—(*Continued*).

No. of Lease.	Name of Owner.	County.	Name and Address of Agent of Company.
224	S. G. Cook	Inverness	S. G. Cook, Sydney
220, 221, 222, 223	W. P. Deppe	Inverness	W. P. Deppe, Mabou, C. B.
6/4	John H. Emmett	Richmond	J. H. Emmett, Halifax
15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28	J. T. Burchell	Victoria	J. T. Burchell, Sydney
11, 12, 29, 30	Nova Scotia Steel and Coal Co., Ltd	Victoria	Thos. J. Brown, Sydney Mines N. S.
45	A. J. Manley	Richmond	
10, 13	Maple Leaf Prospecting Co.	Colchester	W.H.Sylvester, New Glasgow N. S.
381	North Atlantic CollieriesLtd	Cape Breton	C.O.MacDonald,Halifax,N.S.
418, 419, 420, 421, 422, 423, 423, 425, 384, 413, 414, 415, 416, 417	J. Sydney Burchell	Cape Breton	J. S. Burchell, Sydney, C. B.
197, 198, 199, 200, 201	Maritime Coal & R. Co. Ltd.	Cumberland	David Mitchell, Maccan, N.S.
100	Pitcou Coal Mining Co	Pictou	
162	L. B. McMillan	Inverness	
408	Edgar W. Moseley	Cape Breton	

204, 205, 206, 207, 208, 209, 210 ..	Jacob A. Johnson, et al.....	Cumberland..	.....
3	W. J. Murdoch, et al.....	Hants.....	.....
56, 65	Canadian Consoli'ted CoalCo	Richmond....	H.M.Pearl,PortMalcolm,N.S.
101	M. H. Richey.....	Pictou.....	.....
	IRON.		
47, 48, 49, 50, 51, 52, 53, 54, 55, 56 57, 58, 59, 87, 93/44, 103.....	James H. Bartlett.....	Guysboro.....	Ritchie & Robertson, Halifax
1, 2	Nova Scotia Steel and Coal Co., Ltd.....	Inverness.....	Thomas Cantley, New Glasgow, N. S.
10	R. P. Fraser.....	Pictou.....	.....
68, 70, 71, 83.	Nova Scotia Steel and Coal Co., Ltd.....	Pictou.....	Thomas Cantley, New Glasgow, N. S.
1	J. J. Hunt, et al.....	Hants.....	.....
191, 197	Estate John McVicar.....	Cape Breton..	A. G. McLean, Sydney, N.S.
232, 257.....	R. J. Brookman, et al.....	Cape Breton..	E. W. Moseley, Sydney, N.S.
247	H. F. McNeil, et al.....	Cape Breton..	.....
258, 259, 260, 316.....	M. A. McPherson, et al.....	Cape Breton..	.....
7.....	Lauchlin McDonald.....	Antigonish...	.....
8, 9, 10, 11.....	Estate G. B. Cowlan, et al..	Antigonish...	C. B. Whidden, Antigonish, N. S.
282, 324	Edgar W. Moseley.....	Cape Breton..	E. W. Moseley, Sydney, C.B.
14, 17, 18, 19, 20.....	Chas. M. Wilkie.....	Antigonish....	.....
289	Isabella Watson, et al.....	Cape Breton..	.....
292	Wiley Smith.....	Cape Breton..	.....
16A	James Mahoney, et al.....	Antigonish...	J. W. Keith, Stellarton.....
296	A. G. Hamilton, et al.....	Cape Breton..	.....
7	Nathaniel Curry, et al.....	Colchester....	N. Curry, Amherst, N. S....

LIST OF LEASES OTHER THAN GOLD.

Iron, Copper, Lead, Etc.

No. of Lease.	Name of Owner.	County.	Name and Address of Agent of Company.
310, 311	C. B. Coal, Iron & Ry. Co. L'd	Cape Breton.	McInnes, Mellish & Co., Halifax, N. S.
320	Charles Archibald	Cape Breton.	
372	Alexander Matheson	Cape Breton.	
2	Amos Woodworth, et al	Hants	
412	Phœbe Brookman, et al	Cape Breton.	E. W. Moseley, Sydney, N.S,
	Copper, Lead, etc.		
2, 3 (Lead)	George E. Francklyn, et al.	Colchester.	Geo. E. Franklyn, Hfx., N.S.
126 (Copper)	Alexander Matheson	Cape Breton.	
135A (Copper)	Roderick McKenzie	Cape Breton.	
142 (Copper)	Henry LeCras	Cape Breton.	
181 (Copper)	J. E. Burchell, et al	Cape Breton.	
228 (Copper)	John A. McKenzie, et al	Cape Breton.	J. A. McKenzie, Sydney, C.B.
250,70/95,286, 287, 372/106 (Copper)	Boston Holding Co.	Cape Breton.	
5, 16, (Copper)	H. H. MacKay	Antigonish.	
88, (Copper)	American-Canadian M'g Co,	Pictou	
89, (Copper)	Hiram W. Yuill	Pictou	
62, 102, 103, (Lead and Copper)	Cheticamp Copper Co., Ltd.	Inverness	J. W. Regan, Halifax, N. S.

277 (Talc)	John O. Shares	Cape Breton.	.....
94 (Copper)	Henry C. Pray	Pictou	.....
9, 10 (Lead)	H. C. Carson, et al	Victoria	H. C. Corson, Akron, Ohio.
8, 11 (Copper)	Estate T. K. Jenkins, et at.	Colchester	Eastern Trust Co., Halifax, N. S.
145 (Barytes)	Brandram, Henderson Co. Ld	Inverness	J. R. Henderson, Montreal, P. Q.
14 (Lead), 15 (Lead)	Henry C. Corson-	Victoria	.....
13 (Lead)	John Gannon	Victoria	.....
407 (Copper)	William F. Jennison	Cape Breton.	.....
214 (Copper)	Joseph H. Eaton	Cumberland.	.....
232 (Copper)	N. E. McLean, et al	Inverness	N. E. McLean, et al.
4, 5 (Antimony)	N. S. Mines Dev. Co., Ltd.	Hants	A. Hobrecker ,Halifax, N. S.

COAL.—General Statement.

1908.	Production.	Sales.	Colliery Consumption.	
			Engines.	Workmen.
1st. Quarter.....	1,549,106	1,337,868½	122,643	38,155
2nd Quarter.....	1,580,419	1,088,520½	130,728	32,963
3rd Quarter.....	1,624,072	1,493,332	127,029	23,564
4th Quarter.....	1,545,685	1,565,862½	117,933	13,917
	6,299,282	5,485,583½	498,333	108,599

Production and Sales by Collieries, Year ended September 30th, 1908.

Company.	County.	Production.	Sales	Colliery Consumption.	
				Workmen.	Engines.
Dominion Coal Co..	Cape Breton.....	3816958	3386333	41901	229192
Nova Scotia Steel & Coal Co....	Cape Breton.....	662350	613295¼	13921	31630
Cumberland Railway & Coal Co.	Cumberland.....	416132	337175¼	24110	54747
Nova Scotia Steel & Coal Co...	Pictou.....	47845	41886	.....	5959
Acadia Coal Co.....	Pictou.....	413782	330757	9201	75023
Intercolonial Coal Co.....	Pictou.....	315590	263817	6927	29901
M'time Coal Ry.& Pr. Co. Chig'to	Cumberland.....	15839	10319	1358	3822
M'time Coal Ry. & Pr.Co.,Joggins	Cumberland.....	51130½	39087¼	715	8590
Inverness Railway & Coal Co...	Inverness.....	283704½	244690¾	4288	23532
Mabou & Gulf Coal Co.....	Inverness.....	19250	9087	430	6544
Sydney Coal Co.....	Cape Breton.....	4801	4607	157	85
McKay Mining Co.....	Cape Breton.....	13560	11554	667	1339
North Atlantic Collieries.....	Cape Breton.....	58777	46480	1269	7919
Port Hood Coal Co.....	Inverness.....	99700	82202	1680	12428
*Great Northern Coal Co.....	Cumberland.....	2726	2295	72	339
Minudie Coal Co.....	Cumberland.....	48397	38744	1186	2526
Strathcona Coal Co.....	Cumberland.....	23928	20447	570	2909
Atlantic Grindstone & Coal Co.	Cumberland.....	861	714	147	.....
Colchester Coal Co.....	Colchester.....	3951	2103	.....	1848
*1287 tons were produced by the E. Ripley Co.,—the previous owners.		6299282	5485583½	108599	498333

TABLE A.—COAL TRADE BY COUNTIES FOR THE YEAR ENDED SEPTEMBER 30, 1908.

	Cape Breton.		Pictou.		Cumberland.	
	Raised	Sold	Raised	Sold	Raised	Sold
First Quarter.....	1131066	988933	200598	174149	115637	87813
Second Quarter..	1127418	735550	201917	159198	170409	142088½
Third Quarter....	1170288	1108228	194721	159263	147351	117377½
Fourth Quarter...	1127674	1229558	179981	143841	125616	101502
Total.....	4556446	4062269	777217	636451	559013	448781

	Inverness.		Colchester.		Totals.	
	Raised	Sold	Raised	Sold	Raised	Sold
First Quarter....	100793½	86277¼	1011	696	1549105½	1337868¼
Second Quarter..	79428¼	50974¾	1247	719	1580419¼	1088530¼
Third Quarter...	110954¼	108137½	758	317	1624072¼	1493323
Fourth Quarter..	111479	90590	935	371	1545685	1565862
Total.....	402655	335979½	3951	2103	6299282	5485583½

TABLE B.—COAL SALES BY COUNTIES,—YEAR ENDED SEPTEMBER 30th, 1908.

	Cape Breton.	Pictou.	Cumberland.	Inverness.	Colchester.	Total.
Nova Scotia, By Land	1102531	337468	97346½	73283¼	422	1611050¾
" " " Sea..	243760½	9979	1382	84459½	....	339581
Total, Nova Scotia....	1346291½	347447	98728½	157742¾	422	1950631¾
New Brunswick.....	166657½	74159	236621	31212	1681	510330½
Newfoundland.....	179790	24690	.....	2582	....	207062
Prince Edward Island.	38740	.....	.....	24590¾	....	63330¾
Quebec.....	1667747	191982	68064¼	119845	....	2047638½
West Indies.....	.....	.....	.....	.....	....	.....
United States.....	456518	1091	41825¼	.....	....	499634¼
St. Pierre.....	8907	.....	.....	.....	....	8907
Other Countries.....	4697	.....	.....	.....	....	4697
Bunker.....	193352					193352
	4062900	639369	445239	335972½	2103	5485583½

Number and Classes of Workmen Employed at each Mine, year ended September 30th., 1908.

Company.	Underground.				Surface.				Construction.				Totals.		Horses.		Days.
	Skilled Labor.	Laborers.	Boys.	Day's Labor.	Skilled Labor.	Laborers	Boys.	Day's Labor.	Skilled Labor.	Laborers.	Boys.	Day's Labor.	Persons.	Day's Labor.	Above.	Below.	Worked
Dominion Coal Co.	2528	1752	262	1185871	520	396	48	270466	...	.....	.....	.....	5486	1456337	57	468	297
N. S. Steel Coal Co.	783	555	138	399015	123	180	13	95007	.....	.....	.....	.....	1792	494022	3	85	295
" " Pictou	42	43	7	23437	11	9	.....	5893	.....	.....	.....	.....	112	29330	1	.....	284
Cumberland Ry. Coal Co.	570	499	176	274449	143	288	44	108366	6	.....	.....	363	1726	383178	23	58	229
Acadia Coal Co.	308	414	66	244464	72	216	14	120392	.....	.....	.....	.....	1090	364856	34	43	287
Intercolonial Coal Co.	376	249	90	166990	77	115	26	60945	2	2	.....	1067	937	229002	10	87	269
MaritimeCoalRy.Co.Chignecto	74	36	14	32115	12	26	3	10707	....	.....	.....	.....	165	42822	3	5	280
Inverness Ry. Coal Co.	287	132	21	130429	45	68	15	38040	.....	.....	.....	.....	568	168470	5	27	289
Mabou & Gulf Coal Co.	46	16	2	17376	19	11	....	8079	.....	.....	.....	.....	94	25455	5	1	292
Maritime Coal Ry. Co.,Joggins	44	26	2	17801	18	51	8	23826	.....	.....	.....	.....	149	41627	4	2	293
Sydney Coal Co.	11	6	....	2879	2	1	....	1252	.....	.....	.....	.....	20	4131	1	.....	266
McKay Mining Co.	18	11	1	8471	14	1	1	2032	3	.....	.....	488	39	10991	1	1	282
North Atlantic Collieries	74	41	11	38245	14	25	3	12917	17	12	1	9284	198	60446	9	17	303
Port Hood Coal Co.	80	70	7	48417	29	28	2	18390	.....	.....	.....	.....	216	66807	5	10	304
Great Northern Coal Co	12	1	....	3960	6	1	. .	1780	3	.....	.....	744	23	6484	2	.....	240
Minudie Coal Co.	90	19	15	32643	12	16	4	8848	4	1	.....	1259	161	42750	3	2	265
Strathcona Coal Co.	55	47	5	24380	6	8	1	4919	.....	.....	.....	.....	122	29299	1	4	272
Atlantic Grindstone & Coal Co.	4	2	.....	1746	2	1	....	779	.....	....	.....	.....	9	2525	1	.....	294
Colchester Coal Co.	9	5	.....	3804	6	6	.....	3391	....	.....	.....	.....	26	7195	.....	.....	266
	5411	3924	817	2656492	1121	1427	182	796030	35	15	1	13205	12933	3465727	168	778	5317

COAL.

NOVA SCOTIA EXPORTED TO THE UNITED STATES.

Years.	Tons.	Duty.	Years.	Tons.	Duty.
1850	118,173	24 ad.	1879	51,641	75
1851	116,274	"	1880	123,423	"
1852	87,542	"	1881	113,728	"
1853	120,764	"	1882	99,302	"
1854	139,125	Free	1883	102,755	"
1855	103,222	"	1884	64,515	"
1856	126,152	"	1885	34,483	"
1857	123,335	"	1886	66,003	"
1858	186,743	"	1887	73,892	"
1859	122,720	"	1888	30,198	"
1860	149,289	"	1889	29,986	"
1861	204,457	"	1890	50,854	"
1862	192,612	"	1891	25,431	"
1863	282,775	"	1892	13,883	"
1864	347,594	"	1893	16,099	"
1865	465,194	"	*1894	79,837	40
1866	404,252	"	†1895	73,097	"
1867	338,492	$1.25	‡1896	174,919	"
1868	228,132	"	‖1897	106,279	67
1869	257,485	"	1898	98,027	"
1870	168,180	"	1899	153,188	"
1871	165,431	"	1900	624,273	"
1872	154,092	75	1901	590,086	"
1873	254,760	"	1902	751,382	"
1874	138,336	"	1903	968,832	"
1875	89,746	"	1904	713,170	"
1876	71,634	"	1905	652,538	"
1877	118,216	"	1906	769,775	"
1878	88,495	"	1907	616,312	"
			1908	499,634	

NOTE.—The quantities given for the years 1852 to 1872 are on the authority of the Board of Trade, Philadelphia, and are probably underestimated.

*Nine months only.

†NOTE.—After August 1st, 1894, duty on Round Coal, 40 cents, on Culm and Slack, 15 cents.

‡Fiscal year begins October 1st, and ends September 30th. (Cap. 4, Acts 1893.)

‖On July 24th, 1897, the duty was made 67 cents.

GOLD—General Annual Statement

Year.	Material Crushed	Total Gold Extracted.		
		Oz.	Dwt.	Grs.
1862	6473	7275	0	0
1863	17002	14001	14	17
1864	21434	20032	18	13
1865	24423	25454	4	8
1866	32162	25204	13	2
1867	31386	27314	11	11
1868	32262	20541	6	10
1869	35147	17868	0	19
1870	30829	19866	5	5
1871	30791	19227	7	4
1872	17093	13094	17	6
1873	17708	11852	7	19
1874	13844	9140	13	9
1875	14810	11208	14	19
1876	15490	12038	13	18
1877	17369	16882	6	1
1878	17990	12577	1	22
1879	15936	13801	8	10
1880	14037	13234	0	4
1881	15556	10756	13	2
1882	12081	14107	3	20
1883	25954	15446	9	23
1884	25147	16059	18	17
1885	28890	22202	12	20
1886	29010	23362	5	13
1887	22280	21211	17	18
1888	36178	22407	3	10
1889	39160	26155	6	13
1990	42749	24358	9	9
1891	35212	23391	0	0
1892	33633	21080	3	18
*1893	28040	14030	5	7
1894	39333	14980	7	13
1895	58082	22112	17	21
1896	65873	25596	14	6
1897	76559	26579	19	21
1898	86331	31104	17	0
1899	104122	27772	2	3
1900	65744	30399	14	14
1901	87992	30537	4	0
1902	192076	28279	5	13
1903	92645	25198	4	18
1904	62616	14279	18	14
1905	71725	15549	14	6
1606	64495	13048	0	12
1907	64657	13687	6	20
1908	59664	11811	15	0
(Not included in above table.)				
Gold extracted or contained in Stibnite ore shipped from West Gore.	1971990	896123	18	0
	1905 527	1232	16	23
	1906 783	1031	13	11
As per returns contained elsewhere in this report.	1907 1403	1319	18	12
	1907 133	179	5	0
	1974836	899887	11	22

*Nine months only.

PRODUCTION OF GOLD FROM 1862 TO 1907.

District.	Tons Crushed.	Total Yield of Gold.			Averag Yield of Gold.			Value at $19 Per Oz.
		Oz.	Dwt.	Grs.	Oz.	Dwt.	Grs.	
*Caribou and Moose River	203008	55915	16	22	.....	5	12	$ 1062401
Montagu	29178	41985	19	14	1	8	19	797734
Oldham	55037	60982	18	21	1	2	4	1158676
Renfrew	52904	45129	7	19	.....	17	1	857459
Sherbrooke	299931	152973	15	2	.....	10	5	2906501
Stormont	435646	106867	5	17	.....	4	22	2030479
Tangier	51765	24384	11	19	.....	9	10	463307
†Uniacke	63179	43904	3	18	.....	13	21	834180
Waverley	155520	69980	10	16	.....	9	0	1329630
‖Brookfield	92282	38661	18	22	.....	8	7	734676
‡Salmon River	118440	41699	10	20	.....	7	1	792291
‖Whiteburn	6907	9800	0	2	1	8	9	186200
§Lake Catcha	27202	26986	5	23	.....	19	20	512739
¶Rawdon	12189	9606	5	10	.....	15	18	182519
Wine Harbour	77396	34992	15	11	.....	9	1	664863
**Fifteen Mile Stream	36456	17058	15	5	.....	9	8	324117
Malaga	20896	19293	11	7	.....	18	11	366578
Other Districts	138529	73025	16	2	.....	10	13	1387490
	1877465	873249	9	10	.....	9	7	16591740
Not included in above table; Gold extracted from or contained in Stibnite Ore shipped from West Gore, as per returns — 1905	527	1232	16	23	2	6	19	23424
1906	783	1031	13	11	1	6	8	19602
1907	1403	1319	18	12	.....	18	19	25078
1908	133	179	5	0	1	6	23	3406
Total	1880311	877013	3	8			.....	16663250

*From 1869. †From 1866. ‡From 1883. ‖From 1887. §From 1882. ¶From 1887. **From 1883.

GENERAL GOLD STATEMENT—*Year ended September 30th, 1908.*

District.	Tons Crushed.	Total Yield of Gold			Average Yield of Gold per Ton.		
		Oz.	Dwt.	Grs	Oz.	Dwt	Grs.
Stormont	41793	5835	15	0	.....	2	19
Wagamatkook	2800	590	9	19	.....	4	5
Caribou	1240	132	0	0	.....	2	3
Caribou (Moose River)	8952	890	10	0	.....	2	0
Tangier	567	256	0	0	.....	9	1
Oldham	754	2458	3	0	3	5	5
Leipsigate	2692	868	5	19	.....	6	11
Gold River	712	474	16	11	.....	13	8
Brookfield	15	2	5	0	.....	3	0
McKay Settlement	11	1	8	4	.....	2	13
Uniacke	22	21	19	4	.....	19	23
Lake Catcha	106	219	1	14	2	1	8
Montagu Mortared	.....	1	15	0	.....	.....	.....
Uniacke "	.....	53	8	15	.....	.....	.....
Lake Catcha "	.....	5	17	10	.....	.....	.....
*Total	59664	11811	15	0	.....	3	23

*This total does not include the Gold from the Stibnite ore mined at West Gore, Hants Co.
Returns for fiscal year show that 132 tons—1209 lb. of ore contained 179 oz. 5 dwt. of Gold.

MONTHLY STATEMENT FOR EACH GOLD DISTRICT.

Month.	Stormont.					Wagamatkook.				
	No. of Mines.	Tons Crushed	Yield of Gold.			No. of Mines.	Tons Crushed	Yield of Gold.		
			Oz.	Dwt.	Grs.			Oz.	Dwt.	Grs.
1907.										
October	3	4044	581	6	0	No	Crushing			
November	3	3329	563	6	0	"	"			
December	3	4028	542	16	0	"	"			
1908.										
January	3	4097	637	2	0	1	253	52	10	0
February	3	3945	501	6	0	1	311	42	0	19
March	3	3829	483	18	0	1	164	56	19	0
April	3	3868	482	0	0	1	254	47	0	0
May	3	4080	641	4	0	1	244	34	0	0
June	2	3704	459	13	0	1	426	38	0	0
July	2	3659	397	2	0	1	515	29	0	0
August	2	1479	261	12	0	1	363	177	0	0
September	2	1731	284	10	0	1	270	114	0	0
Total		41793	5835	15	0		2800	590	9	19

MONTHLY STATEMENT FOR EACH GOLD DISTRICT,—*Continued.*

Month.	Leipsigate					Gold River.				
	No of Mines.	Tons Crushed	Yield of Gold.			No. of Mines.	Tons Crushed	Yield of Gold.		
			Oz.	Dwt.	Grs.			Oz.	Dwt.	Grs.
1907.										
October	.....	.....	No	Crushing		3	118	74	12	0
November	.....	.....	"	"		1	40	36	9	0
December	.....	.....	"	"		2	78	67	5	6
1908.										
January	1	1008	317	14	14	1	40	39	4	0
February	1	609	116	6	0	1	45	68	3	2
March	1	493	179	5	5	1	66	41	8	0
April	1	582	255	0	0	1	25	12	0	0
May	1	No	Crushing			1	55	22	0	0
June	.....	"	"			3	112	44	15	3
July	.....	"	"			2	68	32	0	0
August	.....	"	"			2	65	37	0	0
September	.....	"	"				No	Crushing		
Total	.....	2692	868	5	19	.....	712	474	16	11

*Returns show, that from the 2692 tons crushed as above mentioned 194 oz.—10 dwt. 15 grs. Silver were extracted.

MONTHLY STATEMENT FOR EACH GOLD DISTRICT, *(Continued.)*

Month.	Caribou.					Caribou (Moose River.)				
	No. of Mines.	Tons Crushed	Yield of gold.			No. of Mine.	Tons Crushed	Yield of Gold.		
			Oz.	Dwt.	Grs.			Oz.	Dwt.	Grs.
1907.										
October		No.	Crushing				No	Crushing		
November		"	"			1	331	24	0	0
December		"	"			1	621	69	0	0
1908.										
January		"	"			2	998	99	0	0
February		"	"			1	1477	125	5	0
March		"	"				No	Crushing		
April		"	"			1	2100	219	15	0
May		"	"			1	193	11	0	0
June		"	"			2	1093	145	10	0
July	1	470	47	0	0	1	750	98	10	0
August	1	110	21	10	0	2	1389	98	10	0
September	1	660	63	10	0		No	Crushing		
Total		1240	132	0	0		8952	890	10	0

MONTHLY STATEMENT FOR EACH GOLD DISTRICT.—(*Continued.*)

Month.	Tangier.					Oldham.				
	No. of Mines.	Tons Crushed	Yield of Gold.			No. of Mines.	Tons Crushed	Yield of Gold.		
			Oz.	Dwt.	Grs.			Oz.	Dwt.	Grs.
1907.										
October	.....	No	Crushing			7	87	227	0	0
November	.....	"	"			No	Crushing			
December	.....	"	"			8	86	169	17	0
1908.										
January	.....	"	"			2	45	196	0	0
February	.....	"	"			1	6	2	15	0
March	.....	"	"			1	50	208	0	0
April	.....	"	"			1	3	1	11	0
May	1	126	107	0	0	5	90	310	17	0
June	1	90	44	0	0	8	141	541	13	0
July	2	146	46	0	0	7	106	408	12	0
August	2	155	44	0	0	7	81	241	10	0
September	1	50	15	0	0	4	59	150	8	0
Total	.....	567	256	0	0	.....	754	2458	3	0

MONTHLY STATEMENT FOR EACH GOLD DISTRICT (*Continuea*)

Month.	Other Districts.				
	No. of Mines.	Tons Crushed	Yield of Gold. Oz.	Dwt.	Grs.
1907.					
October	No	Crushing			
November...	1	9	28	1	0
December...	2	35	53	2	2
1908.					
January.....	1	17	35	9	0
February....	1	6	8	7	10
March.....	1	8	28	12	0
April.....	1	16	25	1	0
May.....	1	8	23	2	10
June.....	1	6	12	10	1
July.....	1	11	1	8	4
August	3	34	29	7	19
September..	1	4	60	13	15
Total....		154	305	14	23

The Figures Under the Heading of "Other Districts" are Made up as Follows:

District.	No. of Mines.	Tons Crushed	Yield of gold. Oz.	Dwt.	Grs.
Brookfield.....	1	15	2	5	0
McKay Settlement.	1	11	1	8	4
Montagu.....	Mortared		1	15	0
Uniacke..... ...	Mortared		53	8	15
Uniacke.....	1	22	21	19	4
Lake Catcha.....	Mortared		5	17	10
Lake Catcha.....	1	106	219	1	14
		154	305	14	23

EMPLOYMENT STATISTICS OF THE COAL INDUSTRY OF NOVA SCOTIA,

YEAR ENDED SEPTEMBER 30TH, 1908.

COMPANY.	Method of Work.	Average number of days a month	Distribution of Colliery Workmen			Total Horses	Accessory Operations			Approximate number employed at points of discharge	Total Workmen
			Surface	Underground	Cutting Coal		Transportation	Commercial	Upkeep Repairs, Construction		
Dominion Coal Co.	Bord and Pillar	24½	1044	3849	1480	608	866	253	316	1000	8808
Nova Scotia Steel and Coal Co.	" "	26	258	686	680	90	225	65	20	50	1984
" " " Pictou	" "	24	20	50	41	1	.....	4	.....	.....	115
Cumberland Ry. and Coal Co.	" "	18½	324	636	480	86	293	18	.....	55	1806
Acadia Coal Co.	Longwall, Bord and Pillar	25	403	534	507	78	8	18	184	24	1678
Intercolonial Coal Co.	" " "	24	1016	422	295	37	20	5	5	3	1766
Maritime Ry. and Coal Co., Joggins	Longwall	24½	10	8	6	6	.....	4	123	.....	151
Maritime Ry. and Coal Co., Chignecto	Bord and Pillar	23	38	61	53	8	.....	4	.....	.....	156
Inverness Ry. and Coal Co.,	" "	26	122	303	289	32	74	6	40	16	850
Mabou and Gulf Coal Co.,	" "	26	25	34	21	3	7	1	1	.....	89
Sydney Coal Co.,	" "	21	2	5	5	1	.....	1	1	.....	14
MacKay Mining Co.	" "	23	10	10	15	.....	.....	1	2	.....	38
North Atlantic Collieries	" "	20¼	55	75	74	22	.....	4	.....	178	386
Port Hood-Richmond Ry. and Coal Co.,	" "	22	62	90	73	10	.....	4	.....	.....	229
Great Northern Coal Co.,	" "	26	12	.....	24	.....	3	.....	.....	.....	39
Minudie Coal Co.,	Longwall	21½	33	36	92	.....	4	2	.....	.....	167
Stratchcona Coal Co.,	Longwall Advancing	21	17	80	48	6	.....	2	.....	.....	147
Atlantic Grindstone and Coal Co.,	Longwall	22	2	2	4	1	.....	1	.....	.....	9
The Colchester Coal Co.,	Bord and Pillar	22¾	12	6	8	.....	.....	2	.....	.....	28
		23¼	3465	6887	4195	989	1500	395	692	1326	18460

NOTE:

Distribution of workmen in accessory operations.

"Transportation," including Railways. Shops, Piers, Banking Station, and all factors of transportation.

"Commercial," including Offices, (outside Colliery Offices) Warehouses, Stores and Accounting.

"Construction," includes all Construction-men outside of Colliery organization.

INTERCOLONIAL RAILWAY.

Statement of coal shipped from Mines in Nova Scotia during the year ended 30th September, 1908.

Station.	Tons.	Station.	Tons.
Halifax	64147	*Brought forward*	
Richmond	70		
Dartmouth	11388¼	Cleveland	15
Waverley	190	River Denys	20
Bedford	283	Cummin's Crossing	7
Windsor Junction	22716½	Orangedale	63
Enfield	280	Alba	22
Elmsdale	224	Iona	24
Milford	26	McKinnon's Harbor	560
Shubenacadie	334	Shenacadie	6
Stewiacke	391	Grand Narrows	22
Brookfield	77	Beaver Cove	15
Truro	17426¼	Boisdale	556
West River	72	Scotch Lake	341
Hopewell	615	North Sydney Jct	76
Ferrona Junction	716	George's River	49
Stellarton	8047¼	Christmas Island	84
Sylvester's	249¾	Sydney Mines	18
New Glasgow	15882½	Point Edward	744
Trenton	58143½	Barachois	149
Pictou Landing	131397½	Sydney	37862
West Merigomish	81¼	East Mines	310
Merigomish	143¼	Londonderry	39218¼
Avondale	69	Wentworth	23
Antigonish	3928	Thompson	73
Heatherton	31	Oxford Junction	3886¾
Bayfield	70	Oxford	2611¼
Tracadie	56	Conn's Mills	13¾
Harbour au Bouche	18	Pugwash Junction	13¼
Pirate Harbor	1129	Pugwash	1144¾
Mulgrave	13071	Wallace Bridge	13¼
Point Tupper	770	Wallace	470¾
Hawkesbury	25	Malagash	110¾
McIntyre's Lake	21	Tatamagouche	588
Carried forward		*Carried forward*	

INTERCOLONIAL RAILWAY.—(*Continued.*)

Station.	Tons.	Station.	Tons.
Urquhart's Siding..	6¾	*Brought forward*.....	
Denmark.....	202½		
Wilson's Siding	20	Plumweseep.....	31
River John.....	727¾	Sussex.....	1202
Haliburton's Siding	53¾	Norton.....	6
Meadowville.....	80½	Hampton.....	620½
Brown's Point.....	6¾	Lakeside.....	63
Scotsburn.....	357	Nauwigewauk. ...	44
Lyons' Brook.....	412¾	Jubilee....	7
Pictou.....	20476½	Rothesay.....	55
River Philip.....	7	St. John...:.....	49030
Spring Hill.....	3104½	Lutes' and Trites'..	663
Athol.....	22	Berry's Mills.....	125
Maccan.....	21	Corbett's, 1 and 2...	3635
Nappan...	62	Canaan.....	60
Amherst.....	62318½	Coal Branch..	33
Fort Lawrence.....	7	Harcourt.....	67½
Aulac.....	213	Kent Junction.....	127
Sackville.....	8249	Rogersville.....	87
Dorchester.....	2359	Chatham.....	5,308
College Bridge.....	674	Loggieville.....	556
Crowson's.....	17	Marysville.....	1,094
Memramcock.....	165	Gibson.....	569
Upper Dorchester..	20	Fredericton.....	2,765
Calhoun's.....	29	Millerton.....	197
Painsec Junction...	221	Indiantown.....	285
Shediac.....	509	Newcastle	5,965
Point du Chene.....	473	Beaver Brook	51
Humphrey's.....	354	Red Pine.....	94
Moncton.....	76028	Gloucester Junction	171
Boundary Creek....	14	Bathurst.....	259
Salisbury.....	1861	Prescott's.....	165
River Glade.....	7	Belledune.....	522
Petitcodiac.....	686	New Mills..	23
Anagance....	14	Dalhousie.....	376
Penobsquis.....	22	Campbellton.....	27,316½
Carried forward.....		*Carried forward*.....	

INTERCOLONIAL RAILWAY.—(*Continued.*)

Station.	Tons.	Station.	Tons.
Matapedia	4853	*Brought forward*	
Millstream	55		
Assametquaghan	158	Chaudiere Curve	124¾
Causapscal	58	Levis	1045
Cedar Hall	34	St. Apollinaire	23
Sayabec	204	Delotbiniere	22¾
St. Moise	35	Villeroy	849¾
Little Metis	40	Aston Junction	23½
St. Octave	23	St. Wenceslas	36¾
Ste. Flavie	38418½	St. Leonard	23
Ste. Luce	22	Nicolet	88¾
Rimouski	736	Carmel	23
Riviere du Loup	25083¾	St. Cyrille	23
Ste. Helene	23¾	Drummondville	21
Dessaint	24	St. Germain	22¾
Riviere Ouelle Wharf	1542	Bagot	23
St. Pacome	23	St. Hyacinthe	12242
St. Jean Port Joli	23	Montreal	14367
L'Islet	170	Jacques Cartier Jct.	65
Cap St. Ignace	33	C. P. R. via St. John	3421
Montmagny	43	" " Ste Rosalie	33
St. Pierre	23	G. T. R. via Chaudiere	176
St. Charles Junction	22¾	G. T. R. via Chaudiere Junc.	99
St. Henri Junction	31645½		
Harlaka Junction	24¼	Total	910952¼
Chaudiere Junction	52709¼		
Carried forward			

INTERCOLONIAL RAILWAY.—(*Continued.*)

SUMMARY.

From.	Tons.
Stellarton	337858
Westville	33919
New Glasgow	126032¼
Point Tupper	75353
North Sydney	67023
Sydney	6732
Springhill Junction	159435
Maccan	104600
Total	910952¼

INTERCOLONIAL RAILWAY.

Statement showing quantities of coal received in tons from the different mines in Nova Scotia for the use of the Intercolonial Railway, from the 1st October, 1907, to 30th September, 1908.

Month.	Dominion Coal Co.	N. S. S. Co.	Inverness.	Pt. Hood.	MacKay.	Acadia.	Intercolonial.	Colchester.	Cumberland Ry & Coal.	Maritime.	Minudie.	Fundy.	E. Ripley.	Strathcona.	Can. Consld't Co.
						Rail Shipments.									
1907.															
October	3784½	1197½	1537½	458½	929½	10942½	3096½	20	Nil.	2684½	6.3	211½	150½	865	
November	3498	2591	635	2283	1084	15441½	8039½	Nil.	650	2827½	1554	42½	67	339½	
December	5928	1237½	1370½	1143½	727	14852	7694½	230	5992	3122	2111	Nil.	152	1117	20 for test.
1908.															
January	12556½	2527	4809	3962½	834	16250	2081	291	9365	3557	3052½	101	179	1335½	
February	4341½	3959½	4038	1169½	1617½	13845½	8607	154	8491	3465½	3282	Nil.	141½	675½	
March	1856	1622½	1717	1175	1541½	15839	10514	Nil.	6749	4257	3495	81½	308	1153	
April	1079	Nil.	1407	1040	1555	13112	12783	141	8801	3747½	2655	41½	20	1334½	
May	612	30	1115	452½	1527	5920	6723	90	10581	4402½	2623	42	Nil. Name changed to Northern.	1110½	
June	586	Nil.	904	128	1436	9023	5401	80	14150	4318	3407	Nil.	91½	1915½	
July	1321	844	851	Nil.	Nil.	3625	6333	178½	8152	3507	1536½	Nil.	206	1274½	
August	1275	941	1268	Nil.	Nil.	4065	7363	90½	7634	2436	1372½	Nil.	164	987	
September	1388	572	1389	356½	204	3160	5629	103½	7919	3084	2288	Nil.	149	1139½	

WATER SHIPMENTS.

					N. A. Coll'ries	Mabou & Golf.
1907.						
October	.....	.....	366	.....	.....	.....
November	.....	.....	.....	310	.....	.....
December	.....	.....	.....	290	674	.....
1908.						
January	.....	.....	.....	.....	1436½	.....
February	.....	.....	.....	.....	290½	.....
March	.....	.....	.....	.....	1877	.....
April	.....	4572	.....	.....	1237	.....
May	.....	20210	3165	3898	1663	.....
June	11150	7023	6673	4600	2483	1702
July	14215	5535	6919	4470	2161	1219
August	5506	5503	6649½	3150	1475	665
September	13427	4514	Nil.	3253	1753	Nil.

Nova Scotia Coal Sales 1785 to 1908 (Inclusive).

Year.	Sales.	Total.
1785	1,668	
1786	2,000	
1787		
1788	10,681	
1789		
1790		14,349
1791	2,670	
1792	2,143	
1793	1.926	
1794	4,405	
1795	5,320	
1796	5,249	
1797	6,039	
1798	5,948	
1799	8,947	
1800	8,401	51,048
1801	5,755	
1802	7,769	
1803	6,601	
1804	5,976	
1805	10,130	
1806	4,938	
1807	5,119	
1808	6,616	
1809	8,919	
1810	8,609	70,452
1811	8,516	
1812	9,570	
1813	9,744	
1814	9,866	
1815	9,336	
1816	8,619	
1817	6,284	
1818	7,920	
1819	8,692	
1820	9.930	91,527
1821	11,308	
1822	7,512	
1823		
1824	27,000	
1825		
1826	12,600	
1827	12,149	
1828	20,967	
1829	21,935	
1830	27,269	140,820
1831	37,170	
1832	50,369	
1833	64,743	
1834	50,813	
1835	56,434	
1836	107.593	
1837	118,942	
1838	106,730	
1839	145,962	
1840	101,198	839,954
1841	148,298	
1842	129,708	
1843	105,161	
1844	108,482	
1845	150,674	
1846	146,506	
1847	201,650	
1848	187.643	
1849	174,592	
1850	180,084	1.533,798

Year.	Sales.	Total.
		Forward. 2,741,948
1851	152 499	
1852	188,076	
1853	217,416	
1854	234,812	
1855	238,215	
1856	253,492	
1857	294,198	
1858	226,725	
1859	270,293	
1860	322,593	2,399,319
1861	326,426	
1862	395,637	
1863	429,351	
1864	576.935	
1865	635,186	
1866	558,520	
1867	471,185	
1868	453,624	
1869	511,795	
1870	568.277	4.927,339
1871	596,418	
1872	785,914	
1873	811,106	
1874	749,127	
1875	706,795	
1876	634,200	
1877	697,665	
1878	693,511	
1879	688,628	
1880	954,659	7,317,430
1881	1,035,014	
1882	1,250,179	
1883	1,297,523	
1884	1,261,650	
1885	1,254,510	
1886	1,373,666	
1887	1,519,684	
1888	1,576,692	
1889	1,755,107	
1890	1,786,111	13,910,136
1891	1,849,945	
1892	1,752,934	
1893	1,485,914	
†1894	2,019,742	
1895	1,831,357	
1896	2,047,133	
1897	2,013,421	
1898	2,135,397	
1899	2,419,137	
1900	2,997,546	20,552,526
1901	3,119,335	
1902	3,898,626	
1903	4,621,074	
1904	4,544,609	
1905	4,475,284	
1906	5,194,590	
1907	5,046,690	
1908	5,485,583	
	Total.....	30,900,208

SUMMARY.

1785 to 1790	14,349	1841 to 1850	1,533,798
1791 to 1800	51,048	1851 to 1860	2,399,319
1801 to 1810	70,452	1861 to 1870	4,927.339
1811 to 1820	91,527	1871 to 1880	7,317,430
1821 to 1830	140,820	1881 to 1890	13,910,136
1831 to 1840	839,954	1891 to 1900	20.552,526

*Nine months only. †Fiscal year begins Oct. 1st and ends Sept. 30th. (Chap. 4, Acts, 1893.)

Province of Nova Scotia

REPORT OF THE DEPARTMENT OF MINES

1908

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